

A word in regard to the causes of disease again.

It has been demonstrated that disease is preventible; and the plague that formerly desolated large countries scarcely appears now. In the year 1592, in London, 21,000 persons died of the plague; in 1603, 36,000; in 1625, 45,000; in 1665 no less than 68,000 persons were swept away in a single year, twice as many persons as die in New York, and this was when London was a comparatively small city. In the little island of Iceland, in the year 1707, 18,000 people died of small-pox out of a population of 50,000. Now this is one of the most easily prevented of all diseases, and it is not probable that there will ever be another serious outbreak. In 1870, 900 persons died in New York, but in 1872 a vaccinating corps was sent out and 100,000 persons were vaccinated—as many as would permit it, being vaccinated free of charge. Yellow fever is equally under control. One of the best illustrations of the possibility of investigating a disease, and of controlling it, is presented by the case of the silkworm. The silkworm forms one of the most important elements of wealth in France. Some years ago a disease broke out among the silkworms, and the caterpillars which make the silk were covered with dark-colored spots; their ability to work suddenly stopped, and the silk industry of France was almost entirely destroyed. A great French chemist investigated the matter, but he at first found scarcely anything to detect in the little worms the character of the disease or its presence until it manifested itself by destroying the worm, but he subsequently discovered in the moths—the previous stage of development—the cause of the disease, or the indications of it, and he found that he could distinguish those moths afflicted with the disease, and that by proper isolation and treatment the disease could be eradicated and controlled, and so this important industry was saved to France.

Comprehensive inquiries have demonstrated the fact that thorough drainage of a place is invariably followed by a decrease in consumption, typhoid fever, and rheumatism. The researches of the English Sanitary Department and recent investigation undertaken by the State Board of Health of Massachusetts, have shown that the average result of drainage improvements, when thoroughly carried out, after a few years, is to reduce the mortality by consumption 15 per cent. and that the reduction continues. At the same time the other causes of mortality are diminished from one-tenth to one-half per cent.

In England a thorough system of drainage and introduction of good water was tried in a number of towns, and it was found that the improvement to the little town of Dover, of 23,000 inhabitants, resulted in 7 per cent. of the mortality being reduced. In Croydon the reduction was 22 per cent.; in Salisbury, 20 per cent.; in Cardiff, 32 per cent., and in Newport 32 per cent.; in other words, one-third of the deaths were prevented in this community by the introduction of a proper system of drainage and fresh water. While the general mortality was diminished in this degree, the mortality from special causes was diminished to a much greater degree.

ome really skilled in the work.

But, while we believe that the proposed change is both desirable and feasible, we can readily foresee at least some of the difficulties in the way of its accomplishment. The majority, if not all, of the companies composing the chamber have pretty full lists of physicians whom they are now in the habit of employing as medical examiners. Some of these lists have been made out with great care and impartiality, and at no small pecuniary outlay; others have been made out with no special care, and have cost little or nothing. When the common list is finally made out, it will be found that it corresponds pretty closely with that upon which a great deal of money and time has been spent. This being the case, it is natural that the companies which have already spent their thousands in securing the services of the best physicians, should object to entering into any coöperative organization in which they are to stand upon the same footing, as regards expenses, with other companies which have spent little or nothing. This objection can be overcome, we believe, by assessing the companies at the very outset according to the following principle: suppose the Association's list for the State of Rhode Island to be completed. Out of the twenty or more companies composing the chamber, it will be found, for example, that five are doing business in that State, and that in a given town two of the five companies are already in the habit of employing the Association's examiner. If we estimate the average expense of obtaining an examiner's name at \$5, the three companies which have not already employed the examiner in question should be assessed \$1 each, and \$1.50 should be placed to the credit of each of the other two companies.

The second great difficulty which the Chamber will have to overcome will be the framing of some working plan or machinery, through which the list of medical examiners can be kept full, can be quickly enlarged when necessary, and at the same time can be made easily available to all the members of the Chamber. This will be a difficult task, but we sincerely hope that the committee having this matter in charge will not be frightened by these difficulties into an entire abandonment of the plan. In the hope of stimulating others who are interested in the subject to express their views upon the proper method of organizing such a work, we shall give a hasty sketch of the plan which seems to us at least feasible, if not the best.

As a preliminary step, let the companies represented in the Chamber bring together their lists of medical examiners, compare notes, and determine upon a list which shall serve as at least the foundation for the roll of medical examiners to be employed by the Associated Life Insurance Companies. When the list is completed it will be necessary to entrust some one with the duty of managing it, as it will require constant revision. Each of the different States of the Union should next be organized into districts, with a medical supervisor or referee to be responsible for the appointments needed at any time within the limits of his district. These referees or supervisors should be men of high social and professional standing, men who will

July

Army Rations.

1864

Section 2 of the act passed by Congress on the 20th of June, having modified the army ration, the War Department yesterday issued the following regulations:

"First—The ration is twelve ounces of pork or bacon, or one pound of salt or fresh beef or eighteen ounces of soft bread or flour, or twelve ounces of hard bread, or one pound and four ounces of cornmeal, and to every one hundred rations, fifteen pounds of beans or peas, or ten pounds of rice or hominy, ten pounds of green coffee, or eight pounds of roasted or roasted and ground coffee or one pound and eight ounces of tea, fifteen pounds of sugar, four quarts of vinegar, one pound and four ounces of Adamantine or star candles, four pounds of soap, three pounds and twelve ounces of salt and four ounces of pepper. The subsistence department, as may be most convenient or least expensive to it, and according to the condition and amount of its supplies, shall determine whether soft bread or flour, and what other component parts of the ration as equivalents, shall be issued.

"Second—On a campaign, on marches, or on board of transports, the ration of hard bread is one pound.

"Third—Desiccated compressed potatoes, or desiccated compressed mixed vegetables at the rate of one ounce and a half of the former and one ounce of the latter to the ration, may be substituted for beans, peas, rice or hominy.

"Fourth—Beans, peas, salt and potatoes, fresh, shall be purchased, issued and sold by weight, and the bushel of each shall be estimated at sixty pounds.

"Fifth—When deemed necessary, fresh vegetables, dried fruit, molasses, pickles, or any other proper food may be purchased and issued, in lieu of any component part of the ration of equal money value. The Commissary General of Subsistence is alone authorized to order such purchases.

"A new order allows sutlers to supply their respective commands in the Army of the Potomac with such articles as are included in the Wilson bill, and the supplement thereto, in such manner as may be prescribed by the Provost Marshal General.

"Officers will be permitted to obtain such articles as they may desire, and are not included in the Wilson bill, in the manner provided for by paragraph five, of a circular of November 7, 1862.

"Attention is called to order No. 105, of December 11, respecting the delivery of wines and liquors, ordered by officers, and to order No. 227, of August 24, regulating the quantity of stores that may be ordered by officers.

"Sutlers and traders will at all times hold themselves in readiness to leave the army upon short notice."

it impossible to save the train, destroyed
re, and retreated, leaving the teamsters
bers at the mercy of our forces.
ter received in Washington by an officer
ardy Hook, Md., states that many strag-
om the retreating invading force, come
at place daily and surrender themselves.
n are worn down by rapid marching,
nbers of them are shoeless, with their
g torn into shreds.

Evening Star learns from a former citi-
Madison county, Va., who has for some
en sojourning in Fairfax county, that he
able information showing that the rebel
meet with so many mishaps in getting
with their plunder from Maryland, that
they have managed to keep will hardly
them for their trouble.

THE NIAGARA CONFERENCE.

Administration have never had before
for consideration any propositions from
el authorities relating to pacification, nor
nown that any such has been received,
whatever may be the facts concerning the
d conference at Niagara, the presump-
re is, that while there has been no formal
on the part of this Government looking
atory measures for a negotiation of peace,
ot indisposed to hear from Niagara or
ere, whatever prominent rebels, acting
as volunteer or authorized Commission-
y have to say regarding this important
without however committing itself to
sideration of any proposition or views
may be suggested. The National Re-
n, commenting on this subject, says:

Hay may converse with people in
upon his own responsibility, but he is
re in any official capacity, nor has the
t made, nor does he propose to make,
morals to or compromise with the rebel
at Richmond, or their real or assumed
Canada or elsewhere."

THE STATE QUOTAS.

otas under the recent call for 500,000
e been sent to the respective Governors.
a of the District of Columbia is nearly
ere is now an excess of 450 over all
alls.

POSTAL MONEY ORDER SYSTEM

ements are being made to organize the
oney order system. Some weeks will
bly elapse before it is put into opera-
ng to the particularity and care re-
perfect the machinery to insure com-
ress.

COUNTERFEIT GREENBACKS.

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U. S. Army ration:

12 oz pork or bacon, or
20 oz beef, fresh or salt;
22 oz. flour or soft bread or
1 lb hard bread or
20 oz. corn meal.

To every ~~100~~ ¹⁰⁰ rations,

30 lbs potatoes,
15 lbs peas or beans &
10 lbs rice or hominy;
10 lbs coffee or
22 oz tea;
15 lbs sugar;
4 quarts vinegar
3 lbs 12 oz salt
4 oz. pepper;
1 quart. molasses.

4981
1864

HENRY
SARTAIN
MEZZOTINTO & LINE PLATE PRINTING,
OFFICE

202 South Ninth Street

Philadelphia

Dumas says a well-fed man
consumes daily 154 grammes carbon,
22.5 grammes nitrogen.

The miners around Charleroi
(Escaupain) eat daily (yet work well)

1 kilogramme of bread

60 grammes butter

30.59 " coffee

750 gr " potatoes & beans, or peas
cooked together, also

1/2 kilogr. meat and milk - or

73 gr. daily - meat - &

2 litres beer a week or

286 gr. daily.

only 14.82 grammes Nitrogen daily.

Monks of La Trappe 15 gr. nitrogen &
402 gr. of carbon & hydrogen together.

Receipt of Aliments

Omit-

Sent copy

1875
✓
EATING DIRT.—It is a common opinion that even in the most civilized communities it is not easy to avoid one's peck of dirt; and some individuals manifest quite a peculiar talent for it, and go through the operation with a readiness and grace which seem to imply a suppressed inclination for the practice. Dr. Frank Galt, of Iquitos, Peru, describes quite a devouring passion for it to prevail among the mestizoes, or half-breeds, of the Upper Amazon. His account is very interesting. Dirt-eating becomes an irresistible passion.

“ Even strangers, English, or the white Peruvian, who have married with the mestizo, and have had children by them, find its presence among the little ones the plague of their life; and the accounts one hears about the tyranny of this habit of dirt-eating on the victims of it would seem almost fabulous, were there not evidences all around one to give sanction to them. Children commence the habit from the time they are four years old, or less, and frequently die from the results in two or three years. In other cases, they grow to manhood or womanhood with the ‘appetite growing by what it feeds on,’ and I have seen here myself, in the case of a mestizo soldier, who was dying from the dysentery which generally, sooner or later, supervenes on this habit, the poor creature, half an hour before his death, detected with a lump of clay stuffed in his sunken cheeks, which he had dragged from the wall near where he was almost breathing his last. Officers here who have the Indian or half-breed children as servants in their employ sometimes have to use wire masks to keep them from putting the clay to their mouths; and women, as they lie in bed sleepless and restless, will pull out pieces of mud from the adjoining walls of their room to gratify their strange appetite, or will soothe a squalling brat by tempting it with a lump of the same material. If persisted in, the effects are surely fatal, at varying terms of years, some living tolerably to middle age, and then dying with dysentery, or from that disease at an earlier period. In the children dropsy is usually the most prominent apparent cause of decline and death.”

epigrammatic wit and finish. They appear in *Blackwood's Magazine* for November, 1872 :

"Here lies an honest man, my brothers,
Who raised himself by raising others.
Anxious his friends from soil to save,
His converse still was with the grave.
To rescue from the tomb his mission,
He took men off to the physician;
And strove that all, whom death releases,
Should rest, if not in peace, in pieces.
So here he waits his resurrection,
In hopes his life may bear dissection."

THE cause of the ex-Emperor Napoleon's death was stated in one of the daily papers to have been embolism, "caused by the intercallations of the electric currents in the operation of lithotritry."

THE many friends of Dr. Wilmer Worthington, of West Chester, will be glad to know that he is at present much better, and that hopes are entertained of his recovery.

PROF. R. VON JAGER has received the Order of the Crown, of the third class (Prussian), and the Order of St. Michael, of the first class (Bavarian).

MORTALITY OF PHILADELPHIA.—The interments reported at the Health Office for the week ending Jan. 18, 1873, were 325; 179 adults, and 146 minors. 6 were of bodies brought from the country; making the mortality of the city 319. Among the causes of death were :

Consumption of the Lungs	41
Other Diseases of the Respiratory Organs	65
Diseases of the Circulatory Apparatus	18
Diseases of the Brain and Nervous System	50
Diseases of the Digestive Apparatus	17
Zymotic Diseases (one from Smallpox)	29
Typhoid Fever	8
Casualties	3
Cancer	4
Gangrene	4
Suicide	1
Debility (including "Inanition" and "Marasmus")	31
Still-born	16
Old Age	11

Dr. Wilmer Worthington

Nutritive Values [For Blackboard]

Gr. per lb.

	Carbon	Nitrogen
Bread	1975	88
Raw Milk	599	44
Cheddar Cheese	3344	306
Beef	1854	184
Mutton	1900	189
Red Herrings	1435	217
Rice	2732	68
Potatoes	769	22
Cocoa	3934	140
Beer	274	1 (over)

Nitrogenous Principles.

Myosin	Gluten <i>Fungin</i>	<i>Neurin</i> ^(Protagon)
Albumen	Veg. Albumen	Cruinin (Hamatin)
Casein	Legumin	Globulin
Fibrin	Gluten	Chondrin (Elastin)

~~Secunds Flour~~

C

n

Ind. meal

3016

120

Rye meal

2593

86

Oatmeal

2831

136

Rice

Potatoes

meat, and the bone handles of knives and forks, or a dozen bone buttons, are just so much soup stolen from the poor.' Gelatin did not retain this high reputation very long; and the labours of Donné, Gannal, Edwards, and Balzac, and of Magendie, brought it more and more into discredit till Jan. 22, 1850, when the Academy of Medicine in Paris, on Bérard's report, proclaimed that gelatin only causes disturbance of the digestive organs, and has no title whatever to be regarded as nutritious. The investigations of Vrolik, Bernard and Barreswil, Boussingault, Frerichs, Mulder, and Donders not being sufficient to settle the true value of gelatin, Voit undertook a series of experiments, in which he fed dogs on gelatin and flesh, on gelatin alone, on gelatin and fat, on flesh and fat, and on gelatin, flesh and fat. In these experiments he forcibly gave to the dog each day its allotted quantity of food, and thus avoided the fallacy arising from the animals occasionally refusing to eat, which vitiated the results obtained by Magendie and others. Voit's own observations show that gelatin lessens the consumption of albumin in the organism, so that a less quantity of flesh is sufficient for an animal's food when gelatin is given along with it. The power of gelatin in this respect is greater than that of fat or carbo-hydrates. Its effect is increased when fat is given with it.

But gelatin alone will not suffice for nutrition, for it only *lessens* the consumption of albumin in the body, but does not arrest it. If sufficient albumin to supply this waste be not contained in the food, the albumin contained in the organs and tissues will be destroyed, and death will ensue. In order to explain this action of gelatin, Voit (*Zeitschrift für Biologie*, vol. viii. p. 297) gives an exposition of his views regarding the manner in which albumin undergoes destruction in the organism. When a dog is well fed with flesh, &c., the amount of albumin destroyed daily in the body (and consequently urea, &c., excreted) will be very considerable; but when it is allowed to fast for several days, the daily destruction of albumin becomes diminished to an enormous extent, although the weight of the body is not much lessened. For example, if a well-fed dog, weighing 5,000 grams, be deprived of food for eight days, the quantity of albumin destroyed in its body on the eighth day will be only 1-18th of that destroyed on the first day of fasting, although the weight has only fallen to 4,446 grams. If the quantity of albumin destroyed on the first day bore the same proportion to the weight of the body as that on the eighth, the weight of the dog on the first day would be eighteen times as much as on the eighth, *i. e.* 80,028 grams, instead of 5,000 as in reality. When the fasting dog again receives albuminous food, the destruction of albumin in its body at once increases enormously. These facts show that the albumin in the organism is very unequally decomposed, one part of it being transformed rapidly while another part undergoes slow disintegration. Voit has, therefore, been induced to divide it into two classes:— (1) Circulating albumin, or albumin which is present in the circulating fluid or lymph, and is rapidly decomposed during the process of circulation through the tissues. (2) Organ-albumin, which is contained in the tissues or organs. So long as it continues to be organ-albumin it is not decomposed, for it is not subjected to the conditions of decomposition; but it may, and does, undergo conversion into circulating albumin, and is then decomposed. This conversion takes place when the normal equilibrium between circulating albumin and organ-albumin is disturbed,

VOIT ON THE NUTRITIVE VALUE OF GELATIN.*

Although gelatin is largely used as an article of food, considerable uncertainty has hitherto prevailed regarding its nutritive value. So highly was it esteemed at the time of the first French Revolution, that Papin, Proust, D'Arcet, Pelletier, and Cadet de Vaux having shown that considerable quantities of it could be extracted from bones, the French government issued a proclamation to the effect that 'a bone is a natural cake of preserved soup; a pound of bones yields as much soup as six pounds of meat; soup from bones is to be preferred to soup from

* VOIT. Ueber die Bedeutung des Gelatins für die Ernährung. (*Zeitschrift für Biologie*, vol. viii.)

ataxy; diminished nervous sensibility in general, especially diminution of reflex sensibility. Sight and hearing are unaffected. The conjunctivæ, like the fauces, are often congested, but the optic nerve is unaltered' (J. V. Laborde, *Archives de Physiologie*, May, 1868). 'The appetite and digestion are unimpaired; tactile sensibility, the sense of temperature and of tickling, appear to be imperfectly conducted, but really are unimpaired; intellect and emotion may seem sluggish; but, when roused, they act normally. It does not alter the chemical constitution of the secretions.' After an excessive dose, 'œdema supervenes on congestion of the uvula and fauces; the whispering voice sinks into aphonia; sexual weakness degenerates into impotency; muscular weakness becomes complete paralysis; reflex, general, and special sensations disappear; hearing, sight, and taste are lost; the mind becomes imbecile, and there occur 'hallucinations of sight and sound, with or without mania;' the pupils are dilated and uncontractile.

Dr. Clarke estimates that two-thirds of his patients who took the bromide several times a day suffered from acne, but he has never known it to result from one dose daily. The spots of bromic acne vary in size from a millet-seed to a large pea, and may be few or many; they affect mostly the scalp, face, and back. They generally disperse without suppuration. They do not scar. They are often much controlled, and quickly dispersed, if iodide of sulphur be smeared several times a day over the hardness as soon as it is felt.

Dr. Clarke agrees with Zæpfel (*Thèse pour le Doctorat*, Paris, 1869) that bromide of potassium affects the reflex irritability, but not the sensibility of the pharynx; thus irritation will not excite deglutition, but the pain of operations is not lessened. He also agrees with Voisin that thirty grains may not impair pharyngeal sensibility, it being sometimes necessary to repeat this dose two or three times, a few hours apart. In administering bromides, Echeverria advises strong coffee with the meals, to increase the therapeutic energy of the medicine and to diminish bromism. He also says that five or ten minims of Fowler's solution with each dose, if alkaline baths be also given, will prevent acne. Moderate doses given several times daily increase the hypnotic action of hydrate of chloral, hyoscyamus, cannabis Indica, lactucarium, ether, or chloroform.

Bromides must be taken several times a day for several days before the sexual functions and sexual appetite become affected. Their effects vary greatly; in some they cause only moderate diminution, in others temporary impairment of these functions. On discontinuing these remedies the sexual organs regain their lost powers. Dr. Clarke quotes Zæpfel, who says that 'bromide of potassium seems to effect particularly the phenomena of reflex sensibility, whose seat, according to some authors, is at the orifice of the ejaculatory canals. The passage of the bromised urine over this orifice produces a local anæsthesia, and so takes away the point of departure of the reflex action (the excito-motory point) of an erection.'

Dr. Clarke recommends bromide of potassium in bronchitis, if the cough be paroxysmal, and in excess of the physical signs (and expectoration?), when it affords more relief than opium: also in sore throat, without redness or swelling, but accompanied with frequent and useless hawking and spitting, and in difficult deglutition of a spasmodic character, whether hysterical or not. He employs this salt in ten-grain

Dr. Clarke's experience of bromides on epilepsy is too small to allow him to speak authoritatively of their efficacy. On this subject he quotes Voisin, who says (*Bulletin Général de Thérapeutique*, May 1871): 'I have employed for many years a method which has given me the best results, and which consists in determining the condition of reflex nausea, by introducing a spoon as far as the epiglottis. I have remarked that a therapeutic dose of the bromide of potassium is not attained till reflex nausea is suppressed; it is not till then that the bulb is certainly acted on, and its excito-motory force diminished. . . . The study of other reflex phenomena, such as lachrymation, cough, and sneezing, enables us to follow the action of the medicine upon the bulb and the spinal cord. The dose should not be increased beyond the suppression of reflex nausea, but it should be given continuously for years together.

as by venesection, which, by removing part of the circulating, leaves an excessive proportion of organ-albumin. The excess is not retained in the body, but is converted into circulating albumin and decomposed. In the normal condition the destruction of organ-albumin is very slow, though it is constantly going on. The greater part of the albumin taken as food-never becomes organ-albumin, but circulates in the current of plasma* and is decomposed, while only a small proportion of it goes to repair the waste of organ-albumin, or be deposited in the organism. Voit believes that the common idea that albumin is converted into peptones by the digestive fluids in the intestinal canal before it can be absorbed, is completely erroneous. He cannot see why we should assume that, because albuminous substances will not pass readily through vegetable parchment or dead animal membranes, they cannot pass through the intestinal walls, when they do so with ease through every possible membrane and organ in the body. He believes that only a small proportion of the albumin introduced into the digestive canal is converted into peptones, the greater part of it being absorbed without losing its albuminous characters. Fick has also observed the great decomposition of albumin (indicated by increased excretion of urea) which follows the ingestion of albumin.

quantities of achroodextrin, and the process of malt-ing appears to be the best for producing achroodextrin, though it acts on starch in the most energetic manner. On erythroextrin, diastase acts as energetically as on starch itself.

Glycogen in many respects resembles erythroextrin, but differs from it in always forming opalescent solutions.

II. *Digestion of Boiled Starch.*—The changes which starch undergoes in the stomach were studied in dogs, which were killed from one to five hours after having been fed on a meal principally composed of starch. The contents of the stomach and of the duodenum were separately analysed. In the stomach, along with a greater or less quantity of starch-mucilage, according to the extent of digestion, large quantities of soluble starch (amidulin), and erythroextrin were found; the latter especially towards the end of gastric digestion. Achroodextrin is also produced in the stomach, but apparently only in very small amount. Sugar, unless it have been given in the food, is either not found in the stomach, or, if so, in very small quantity. In the small intestine sugar was always found, whether it had been given with the food or not. Erythroextrin was not found, or, if so, not in any appreciable amount.

The first noteworthy fact in reference to these

stomach, even after a meal

of a large amount of acid; but this is only a matter of time.

The concomitant formation of dextrin seems to point to the fermentation-process as a normal pre-

Gelatin is no plastic nutriment, in the sense in which

* The word plasma here signifies the interstitial fluid or lymph which bathes the tissues.

RECORD. 37

Liebig uses the term. But when gelatin alone is given, less organ-albumin is converted into circulating, and thus the organism loses less albumin. When gelatin is administered along with a small quantity of albumin, a much less proportion of the albumin contained in the food is decomposed, and a much smaller amount is, therefore, sufficient to supply the wants of the body. The same occurs when gelatin is given along with a large quantity of albumin, and in this case more albumin is stored up. If albumin be given alone without gelatin, much more of it is required to prevent the organism from losing albumin, since that contained in the food is chiefly converted into circulating albumin and decomposed. Gelatin likewise passes into the current of plasma, and becomes subjected to the conditions of decomposition; and as it, like peptones, is more readily decomposed than the albumin of the plasma, it takes the place of the latter to some extent, and saves a part of it from destruction. The proportion of circulating albumin being thus kept up, there is no necessity for that conversion of organ-albumin into circulating, which would otherwise be necessary to keep up the balance between the two sorts. The destruction of albumin being therefore less, a much smaller quantity of it will suffice to repair waste or even to supply some which will be stored up in the organism. It is probable also that, in addition to its power to save albumin, gelatin lessens the destruction of fat, though only to a very slight extent. Gelatin is therefore a most valuable nutriment, which deserves much attention. Voit is far from recommending that much albumin should be withdrawn from the food and replaced by gelatin, for much gelatin easily causes disgust, and, when taken for a long time and in large quantities, perhaps produces disease in the intestines; but when its use is rightly understood and it is properly employed, the best results may be expected from it.

T. LAUDER BRUNTON, M.D.

violet colour as due to a mixture of dextrin and starch. In order to avoid confusion with regard to the substances whose properties are so differently given, he proposes the name *Achroodextrin* for Nasse's dextrinogen (Béchamp's dextrin), and the term *Erythroextrin* for Nasse's dextrin, the substance which is turned red by iodine. He finds that neither erythroextrin, prepared by Payen's method from roasted starch, nor achroodextrin, prepared from starch by digestion with malt, or by the action of sulphuric acid, reduces copper solution. The reduction of copper by commercial dextrin depends on the presence of sugar. He therefore, in the course of his paper, recognises the following substances :—

1. Starch which is turned blue by iodine, of which there are two varieties; (*a*) unchanged and swollen (Kleister); (*b*) soluble (amidulin);
2. Erythroextrin, turned red by iodine;
3. Achroodextrin, not coloured by iodine, precipitated by alcohol from watery solutions;
4. Sugar, which reduces copper and becomes brown with potash.

Griesmayer, whose dextrin I. is the same as achroodextrin, and whose dextrin II. corresponds to erythroextrin, says that the former has a greater affinity for iodine than starch. Brücke does not agree with this; for he finds that, when the two are present together, the blue colour of the starch appears before the red of the erythroextrin, at least at ordinary temperatures. Tannin in substance precipitates the starch and leaves dextrin in solution. The best method of separating the various substances from each other, is by fractionating with alcohol. The starch is first precipitated, then the erythroextrin, and lastly the achroodextrin, which generally carries sugar with it. Part of the achroodextrin is likewise carried down with the erythroextrin. Iodine and sulphate of sodium also, among other reagents, precipitate the starch and leave the dextrin in solution. The products of the conversion of starch differ according to the method used. The ordinary commercial dextrin made by

The Preservation of Food.—At the meeting of the Academy of Medicine in Paris on March 31, M. POGGIALE read a report which had been made to the Sanitary Council of the Department of the Seine, on a process for preserving meat proposed by M. Tellier, a civil engineer. The process consists in keeping the chamber or vessel containing the meat at a temperature of about 30 or 32 deg. Fahr. M. Tellier objects to ice, as it gives off moisture, and does not lower the temperature sufficiently or uniformly; he prefers dry air, or rather fluid currents at a temperature of 14 to 17.5 deg. Fahr. In his establishment at Auteuil, the cold is produced by the evaporation and condensa-

to all as a work of reference. It should be looked upon as an essential part of a physician's library. We are glad to see that particular attention has been paid to the accentuation of terms.—*Boston Med. and Surg. Journal*, May 28, 1874.

This is a new edition of the most popular medical lexicon in the English language, enlarged and revised by the son of the lamented author, Dr. Richard J. Dunglison. The reputation which the dictionary has enjoyed for forty years, at home and abroad, will be fully sustained and even enhanced by the present edition of the work. It is fortunate for the medical profession of our country that the son has inherited the qualities of mind which fitted the father in so eminent a degree for the work of a lexicographer. The fate of Dunglison's Dictionary is secure. In the hands of the son it will be kept up to the full measure of excellence which has left it for nearly half a century almost without a rival. It is safe to say that it will be found on the table of every American physician.—*Am. Practitioner*, June, 1874

A—Philadelphia.

Preser
of Book

tion of methylic ether. The apparatus consists of a *frigorifère* in which the ether is evaporated, a condenser kept cool by a stream of water, and a force-pump. The ether-vapour, escaping from the *frigorifère* at a tension of about one and a half atmospheres and a temperature of -5.8 deg. Fahr., is subjected in the condenser to a pressure of six, seven, or eight atmospheres. The vapour is thus liquefied, and the fluid returns into the *frigorifère* without any sensible loss. This alternation of gaseous and fluid states is constantly maintained, and produces cold. M. Poggiale had seen at Auteuil mutton, hare, partridge, pheasants, etc., in a perfect state of preservation, though they had been kept for weeks and even months. Some of the meat and game was roasted and eaten, and was found to be excellent. These observations were confirmed by MM. Bouley and Pélignot. M. Poggiale exhibited some specimens to the Academy, all of which were in good condition; and, in reply to a question from M. Blot, he said that they would remain good for three or four days, like ordinary meat. The game, however, was stated by M. Poggiale and M. Bouley to lose its flavour to a considerable extent. Ordinary butcher's meat is less affected in this way. It is said that M. Tellier proposes to form a vast establishment for the preservation of food in South America.—*Brit. Med. Journ.*, April 11, 1874.

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NEW MODES OF PRESERVING MEAT.

At a meeting of the Pharmaceutical Society of Edinburgh, Mr. I. Mackay brought before it a new method of preserving beef, mutton, and other animal substances used for food, in a perfectly fresh condition, free from salt or any other ingredient likely to interfere with the flavor or condition of the material so preserved. Mr. Mackay stated that the discovery was due to Dr. Redwood. In the course of the summer before last Dr. Redwood began a series of experiments with paraffin. The following peculiarities of this substance were referred to, viz.: its solidity, whiteness, tastelessness and entire freedom from smell. At 130 deg. F. it becomes fluid, and may be raised several hundred degrees above 212, or the boiling point, without altering its condition. It was found that animal substances, when immersed in a bath of paraffin heated to about 300 deg., rapidly lost their air and water, leaving the juices of the meat to be absorbed by the joint under operation. According to the thickness of the mass of meat, the time of its immersion is increased or diminished. By this process the germs of decomposition are found to be quite destroyed, very much on the same principle that the various articles of food are prepared in hermetically sealed vessels, or the calfsfoot jelly bottled and kept in a state of perfect preservation. When the meat has thus been allowed to remain a sufficient length of time in the highly heated paraffin, it is removed and immediately dipped into a bath containing the same material at a lower temperature, and after two or three dippings the process is complete, and the substances thus preserved are ready for home or foreign consumption. Already various samples have been prepared, and after three months' keeping have been cooked and found perfectly sweet and free from any taint whatever.

Another promising process for preserving meat during long periods is that for which Messrs. E. Paris and B. S. McCall have obtained a patent in England for the whole of South America. These gentlemen profess to be able to preserve meat in its fresh and raw state, which can be transported from South America to England, or elsewhere, in the exact condition of butchers' meat just killed, and to be able to dispose of it at 8 to 10 cents a pound. Moreover, this preserved meat, when taken out of the air-tight cans in which it is to be packed, and exposed to the air, will keep twice as long as ordinary butchers' meat. The curing process is simple, and is based on the removal of the oxygen from the vessel in which the meat is packed. All the bone is extracted from the meat, but the fat is left. From the case or vessel in which it is placed the air is exhausted by means of a solution of bi-sulphate of soda, or of potash, poured in at the bottom, which, when it reaches the top, is allowed to descend and run off, and the vacuum thus left is filled from above by carbonic acid (sparkling gas). The immersions and the supplies of gas are repeated as often as may be required. Into the case containing the food a regulated quantity of diluted sulphurous acid and an equivalent quantity of carbonate or bicarbonate of soda or potash is to be added separately. The acid and the alkaline salt do not come into contact until the case is hermetically sealed, when they are to be brought into contact by shaking, and the liquid resulting, charged with carbonic acid, bathes the surface and impregnates the meat. Other varieties in the process are detailed by the patentees. There is one point on which the patentees lay great stress, viz., the necessity of lining tin or other vessels employed with matting, wickerwork or other like suitable material, to protect the substance being preserved—fresh meat, poultry, game and fish—from contact with the containing vessels.

At an entertainment given at Buenos Ayres to the Vice President of the Argentine Republic, some of the beef which the patentees of the process had brought with them from England, and which had been cured six months previously, was brought to table, cooked, and found to be nowise different from freshly killed meat. Since then, South American beef, prepared by the new process some months previously, was eaten with much relish at a large party assembled for the purpose in London. The gain to the industrial classes in England by this new process of preserving meat will be immense; and in our own country the use of a similar process could not fail to be of extensive benefit. The saving in the expense of transporting such meat, as compared with that of live cattle, would be very great. Our people would be well pleased to be able to buy good fresh beef at 8 to 10 cents a pound, in place of three times this rate, which they are now paying in the Atlantic cities. The usual effect of competition would also be felt in forcing on our cattle dealers some reduction of existing prices.

R.

N CENTS PER WEEK.

Legislature of Maryland. Referred to the Judiciary Committee.

INDIAN AFFAIRS.

The House then proceeded to the consideration of the bill which was before the House yesterday to reorganize the Indian Department.

Mr. Higby said he would be in favor of a transfer of the control of the Indians to the War Department, if the present reservation system could be preserved.

Messrs. Schenck and Kasson were unreservedly in favor of the transfer.

Messrs. Darling, Sloan and Bidwell advocated the same views.

Messrs. Henderson and Ross opposed the transfer, but advocated the Senate bill as reported from the Committee on Indian Affairs. None of the speakers were in favor of continuing the present system.

The debate was closed by Mr. Windom, chairman of the Committee on Indian Affairs, who explained and advocated the Senate bill.

The Speaker, during an interruption in the debate, referred the House to the resolution reported to-day from the Committee on Enrolled Bills, in reference to the two bills not signed nor vetoed by the President, and said he had since found two precedents bearing on the case. The Clerk thereupon read from the Journal two extracts, showing that on February 28, 1861, a message was received from President Buchanan, notifying the House that an act for the relief of Hockaday and Liggett, having been presented to the President on the 16th of February, 1861, and not having been returned by him within ten days, it had become a law under the Constitution, and that on March 2d, 1861, a like message was received from Mr. Buchanan in reference to a joint resolution for the benefit of George H. Gludings.

Mr. Windom, resuming his argument, read copious extracts from testimony taken by Indian commissions, showing instances of atrocity practised by the military against the Indians, including the massacre of friendly Indians by the troops under Col. Chivington. He appealed to the House, in conclusion, to pass the bill, and test its operation for at least one year.

The amendment offered yesterday by Mr. Chanler was to extend to the Indians the same political rights given to negroes. It was rejected.

An amendment, reported by the Committee on Indian Affairs, authorizing the Assistant Superintendent or Chief Clerk to execute the duties of Superintendent, when the latter is suspended or removed, was adopted.

The vote was then taken by yeas and nays on Mr. Schenck's amendment, transferring the control of Indian affairs to the War Department, and it was adopted—yeas 76, nays 73.

Mr. Schenck moved to reconsider the vote adopting the amendment, and also moved to lay the motion to reconsider on the table, which is the parliamentary mode of clinching a vote. The yeas and nays were taken, and the motion to reconsider was laid on the table—yeas 77, nays 70.

Mr. Windom then moved to lay the bill on the table, but withdrew the motion, so as to let the yeas and nays be taken on ordering the bill to be read a third time.

The bill was ordered to be read the third time—yeas 90, nays 53. The bill was then passed without a division, and the title was amended so as to read, a bill to transfer the Indian Bureau to the War Department.

Mr. Windom suggested that the title should be to massacre Indians and deplete the Treasury.

BILLS DISPOSED OF.

The House then proceeded to the business on the Speaker's table, and disposed thereof as follows:

Senate bill to punish illegal voting in the District of Columbia. Passed.

Senate amendment to the House bill authorizing the extension, construction and use of a lateral branch of the Baltimore and Potomac Railroad into and within the District of Columbia. Amendments concurred in.

Senate amendment to the House bill to amend the act of September 24th, 1789, to establish the Courts of the United States. Concurred in.

Senate amendments to the House bill to punish certain crimes in reference to the public securities and currency. The amendments were concurred in.

The Senate bill of last session, granting lands to aid the construction of a railroad and telegraph line from the Bay of San Francisco to Humboldt Bay, California. Passed over without action.

The Senate bill regulating the tenure of certain civil offices.

Mr. Hale gave notice that he would bring this bill to a vote to-morrow at four o'clock, and as it would come up to-morrow as unfinished business, he would yield to a motion to go into Committee.

THE FORTIFICATION APPROPRIATION.

The House then, at four o'clock, on motion of Mr. Stevens, went into Committee of the Whole on the State of the Union, Mr. Pomeroy in the chair, and proceeded to the consideration of the Fortification Appropriation bill.

Mr. Blaine, by direction of the Committee on Military Affairs, moved an amendment appropriating \$150,000 for the commencement of two additional forts in Portland harbor, Maine. The appropriation was advocated by Messrs. Blaine, Lynch and Schenck, and was opposed by Mr. Spaulding.

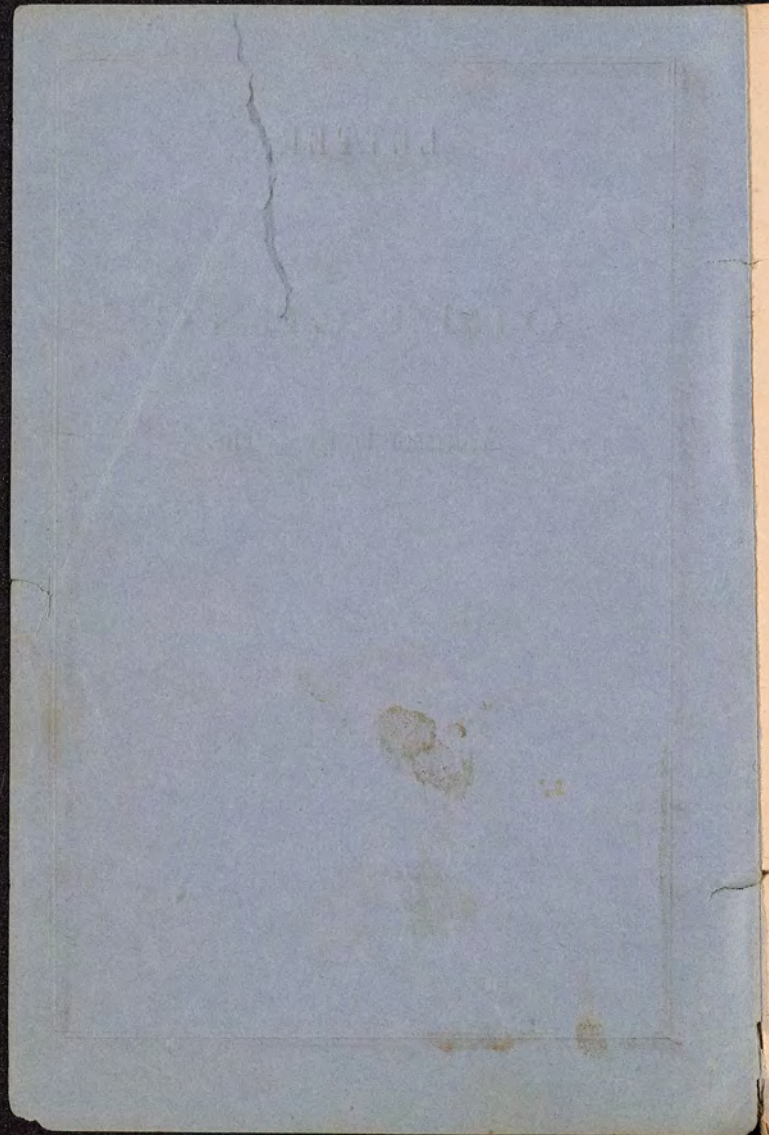
LETTER
ON
CORPULENCE

Addressed to the Public.

BY
WILLIAM BANTING.

EIGHTH EDITION.

PHILADELPHIA:
J. B. LIPPINCOTT & CO.
715 AND 717 MARKET STREET.
1872.



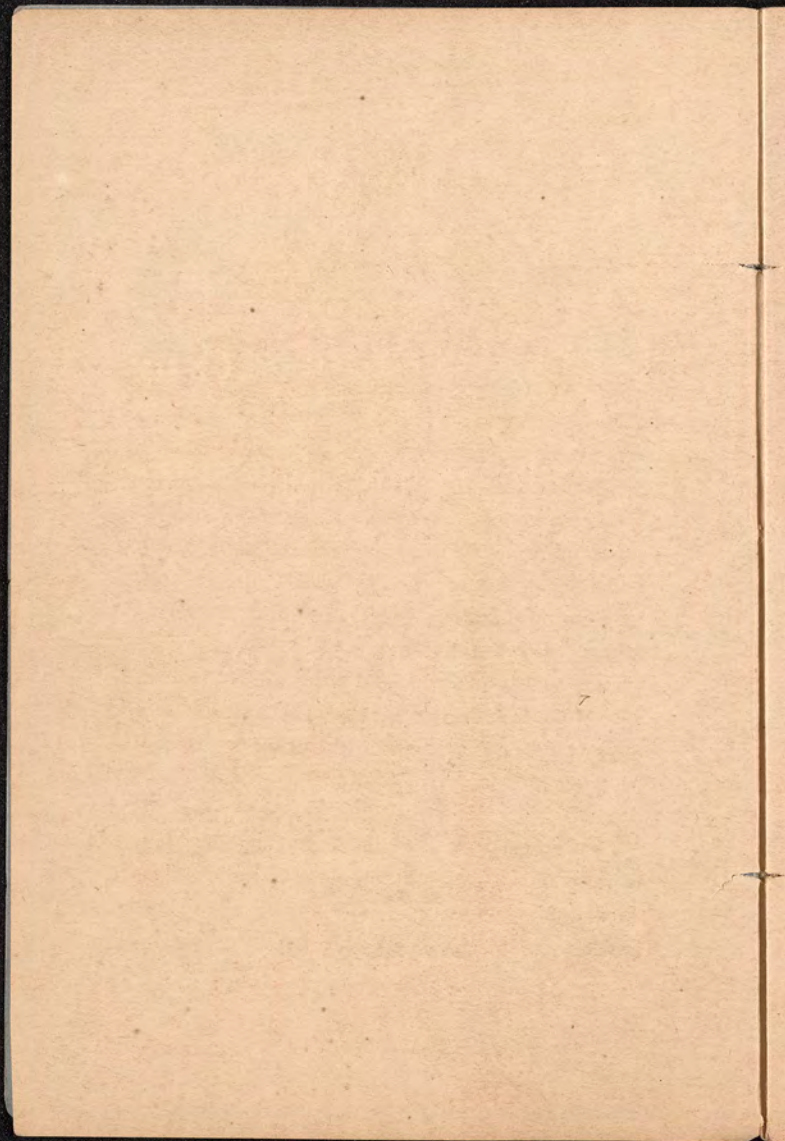
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PREFACE TO THE THIRD EDITION.

THE second edition of this pamphlet (consisting of 1500 copies) being exhausted, and the result being very gratifying to my mind, in the large amount of satisfaction and benefit which I am able to report from evidence of others (*beyond my most sanguine expectations*), considering the hitherto limited circulation, I have felt impelled to publish, advertise, and sell this third edition, at cost price, which I am informed must be sixpence a copy. If this small charge, however, should yield any profit, I shall devote it to the Printers' Pension Society, or some other benevolent institution; but I have no such expectation, or would very gladly reduce the charge at starting.

The first and second editions were no very serious expense to me, scarcely threepence a copy, but the circulation of them, and the correspondence involved, have cost me far more; yet I saw no way of securing

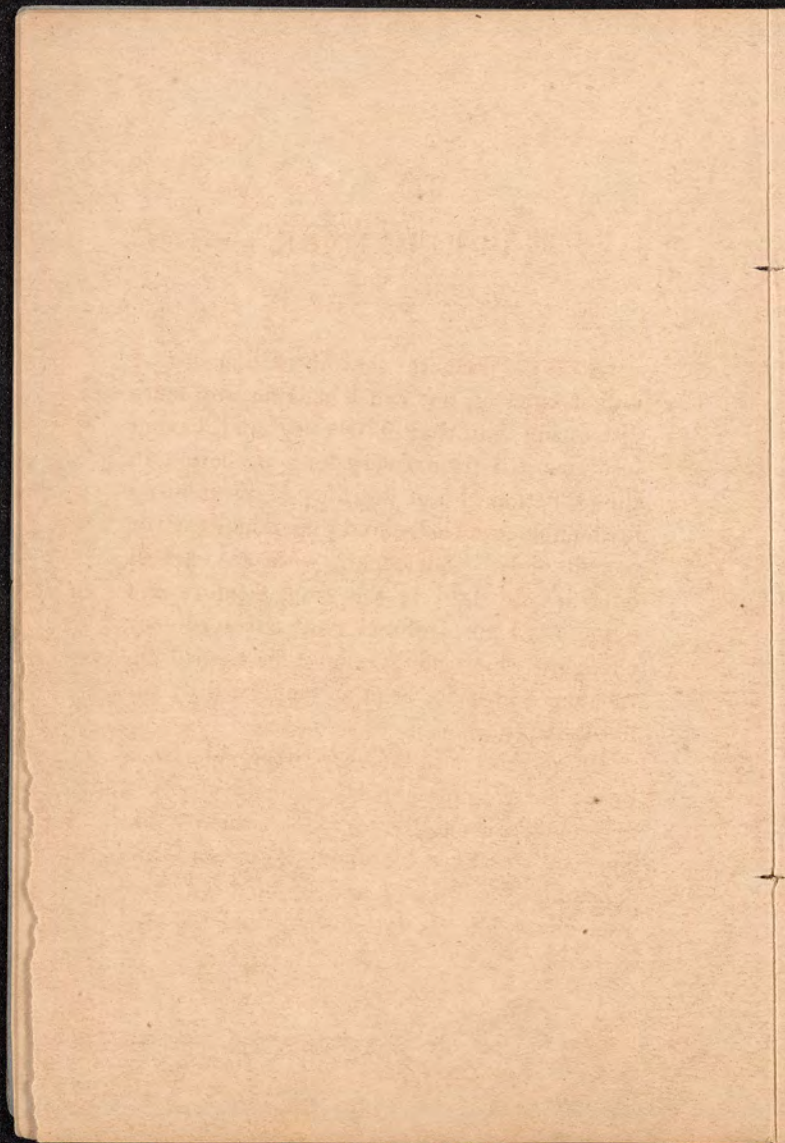
my motives from misconception except by gratuitously presenting the pamphlet to the public.

The truthful tale has, however, made its way into a large circle of sufferers, with marvelous effect; and I can now believe the public will rather prefer to purchase the third edition at a reasonable charge than be under obligation to me for a gratuitous supply. I therefore humbly trust, and fully believe, that by this means the useful knowledge will be distributed twentyfold to the benefit of suffering humanity, which, indeed, is my sole object.

KENSINGTON, *December*, 1863.

THIS LETTER is respectfully dedicated to the
Public simply and entirely from an earnest de-
sire to confer a benefit on my fellow-creatures.

W. B.



CORPULENCE.

OF all the parasites that affect humanity I do not know of, nor can I imagine, any more distressing than that of Obesity, and, having just emerged from a very long probation in this affliction, I am desirous of circulating my humble knowledge and experience for the benefit of my fellow-man, with an earnest hope it may lead to the same comfort and happiness I now feel under the extraordinary change,—which might almost be termed miraculous had it not been accomplished by the most simple common-sense means.

Obesity seems to me very little understood or properly appreciated by the faculty and the public generally, or the former would long ere this have hit upon the cause for so lamentable a disease, and applied effective remedies, while the latter would have spared

their injudicious indulgence in remarks and sneers, frequently painful in society, and which, even on the strongest mind, have an unhappy tendency; but I sincerely trust this humble effort at exposition may lead to a more perfect ventilation of the subject and a better feeling for the afflicted.

It would afford me infinite pleasure and satisfaction to name the author of my redemption from the calamity, as he is the only one that I have been able to find (and my search has not been sparing) who seems thoroughly up in the question; but such publicity might be construed improperly, and I have, therefore, only to offer my personal experience as the stepping-stone to public investigation, and to proceed with my narrative of facts, earnestly hoping the reader will patiently peruse and thoughtfully consider it, with forbearance for any fault of style or diction, and for any seeming presumption in publishing it.

I have felt some difficulty in deciding on the proper and best course of action. At one time I thought the editor of the *Lancet* would

kindly publish a letter from me on the subject, but further reflection led me to doubt whether an insignificant individual would be noticed without some special introduction. In the April number of the *Cornhill Magazine* I read with much interest an article on the subject—defining tolerably well the effects, but offering no tangible remedy, or even positive solution of the problem—“What is the cause of Obesity?” I was pleased with the article as a whole, but objected to some portions, and had prepared a letter to the editor of that magazine, offering my experience on the subject, but again it struck me that an unknown individual like myself would have but little prospect of notice; so I finally resolved to publish and circulate this pamphlet, with no other reason, motive, or expectation than an earnest desire to help those who happen to be afflicted as I was; for that corpulence is remediable I am well convinced, and shall be delighted if I can induce others to think so. The object I have in view impels me to enter into minute particulars, as well as genera? ob-

servations, and to revert to bygone years, in order to show that I have spared no pains nor expense to accomplish the great end of stopping and curing obesity.

I am now nearly 66 years of age, about 5 feet 5 inches in stature, and, in August last (1862), weighed 202 pounds, which I think it right to name, because the article in the *Cornhill Magazine* presumes that a certain stature and age should bear ordinarily a certain weight, and I am quite of that opinion. I now weigh 167 pounds, showing a diminution of something like 1 pound per week since August; and having now very nearly attained the happy medium, I have perfect confidence that a few more weeks will fully accomplish the object for which I have labored for the last thirty years, in vain, until it pleased Almighty Providence to direct me into the right and proper channel—the “tramway,” so to speak—of happy, comfortable existence.

Few men have led a more active life—bodily or mentally—from a constitutional anxiety for regularity, precision, and order,

during fifty years' business career, from which I have now retired, so that my corpulence and subsequent obesity was not through neglect of necessary bodily activity, nor from excessive eating, drinking, or self-indulgence of any kind, except that I partook of the simple aliments of bread, milk, butter, beer, sugar, and potatoes more freely than my aged nature required, and hence, as I believe, the generation of the parasite, detrimental to comfort, if not really to health.

I will not presume to descant on the bodily structural tissues, so fully canvassed in the *Cornhill Magazine*, nor how they are supported and renovated, having no mind or power to enter into those questions, which properly belong to the wise heads of the faculty. None of my family on the side of either parent had any tendency to corpulence, and from my earliest years I had an inexpressible dread of such a calamity; so, when I was between thirty and forty years of age, finding a tendency to it creeping upon me, I consulted an eminent surgeon, now long de-

ceased,—a kind personal friend,—who recommended increased bodily exertion before my ordinary daily labors began, and thought rowing an excellent plan. I had the command of a good, heavy, safe boat, lived near the river, and adopted it for a couple of hours in the early morning. It is true I gained muscular vigor, but with it a prodigious appetite which I was compelled to indulge, and consequently increased in weight, until my kind old friend advised me to forsake the exercise.

He soon afterward died, and, as the tendency to corpulence remained, I consulted other high orthodox authorities (*never any inferior adviser*), but all in vain. I have tried sea air and bathing in various localities, with much walking exercise; taken gallons of physic and liquor potassæ, advisedly and abundantly; riding on horseback; the waters and climate of Leamington many times, as well as those of Cheltenham and Harrogate frequently; have lived upon sixpence a day, so to speak, and earned it, if bodily labor

may be so construed; and have spared no trouble or expense in consultations with the best authorities in the land, giving each and all a fair time for experiment, without any permanent remedy, as the evil still gradually increased.

I am under obligations to most of those advisers for the pains and interest they took in my case; but only to one for an effectual remedy.

When a corpulent man eats, drinks, and sleeps well, has no pain to complain of, and no particular organic disease, the judgment of able men seems paralyzed,—for I have been generally informed that corpulence is one of the natural results of increasing years; indeed, one of the ablest authorities as a physician in the land told me he had gained one pound in weight every year since he attained manhood, and was not surprised at my condition, but advised more bodily exercise—vapor-baths and shampooing, in addition to the medicine given. Yet the evil still increased, and, like the parasite of barnacles

on a ship, if it did not destroy the structure, it obstructed its fair, comfortable progress in the path of life.

I have been in dock, perhaps twenty times in as many years, for the reduction of this disease, and with little good effect—none lasting. Any one so afflicted is often subject to public remark, and though in conscience he may care little about it, I am confident no man laboring under obesity can be quite insensible to the sneers and remarks of the cruel and injudicious in public assemblies, public vehicles, or the ordinary street traffic; nor to the annoyance of finding no adequate space in a public assembly if he should seek amusement or need refreshment, and therefore he naturally keeps away as much as possible from places where he is likely to be made the object of the taunts and remarks of others. I am as regardless of public remark as most men, but I have felt these difficulties, and therefore avoided such circumscribed accommodation and notice, and by that means have been deprived of many advantages to health and comfort.

Although no very great size or weight, still I could not stoop to tie my shoe, so to speak, nor attend to the little offices humanity requires, without considerable pain and difficulty, which only the corpulent can understand; I have been compelled to go down stairs slowly backward, to save the jar of increased weight upon the ankle and knee joints, and been obliged to puff and blow with every slight exertion, particularly that of going up stairs. I have spared no pains to remedy this by low living (*moderation and light food* was generally prescribed, but I had no direct bill of fare to know what was really intended), and that, consequently, brought the system into a low impoverished state, without decreasing corpulence, caused many obnoxious boils to appear, and two rather formidable carbuncles, for which I was ably operated upon *and fed into increased obesity*.

At this juncture (about three years back) Turkish baths became the fashion, and I was advised to adopt them as a remedy. With the first few I found immense benefit in power

and elasticity for walking exercise; so, believing I had found the "philosopher's stone," pursued them three times a week till I had taken fifty, then less frequently (as I began to fancy, with some reason, that so many weakened my constitution) till I had taken ninety, but never succeeded in losing more than six pounds' weight during the whole course, and I gave up the plan as worthless; though I have full belief in their cleansing properties, and their value in colds, rheumatism, and many other ailments.

I then fancied increasing obesity materially affected a slight umbilical rupture, if it did not cause it, and that another bodily ailment to which I had been subject was also augmented. This led me to other medical advisers, to whom I am also indebted for much kind consideration, though, unfortunately, they failed in relieving me. At last, finding my sight failing, and my hearing greatly impaired, I consulted, in August last, an eminent aural surgeon, who made light of the case, looked into my ears, sponged them in-

ternally, and blistered the outside, without the slightest benefit, neither inquiring into any of my bodily ailments, which he probably thought unnecessary, nor affording me even time to name them.

I was not at all satisfied, but on the contrary was in a worse plight than when I went to him; however, he soon after left town for his annual holiday, which proved the greatest possible blessing to me, because it compelled me to seek other assistance, and happily I found the right man, who unhesitatingly said he believed my ailments were caused principally by corpulence, and prescribed a certain diet,—no medicine, beyond a morning cordial as a corrective,—with immense effect and advantage both to my hearing and the decrease of my corpulency.

For the sake of argument and illustration I will presume that certain articles of ordinary diet, however beneficial in youth, are prejudicial in advanced life—like beans to a horse, whose common ordinary food is hay and corn. It may be useful food occasionally,

under peculiar circumstances, but detrimental as a constancy. I will, therefore, adopt the analogy, and call such food human beans. The items from which I was advised to abstain as much as possible were: Bread, butter, milk, sugar, beer, and potatoes, which had been the main (and, I thought, innocent) elements of my existence, or at all events they had for many years been adopted freely.

These, said my excellent adviser, contain starch and saccharine matter, tending to create fat, and should be avoided altogether. At the first blush it seemed to me that I had little left to live upon, but my kind friend soon showed me there was ample, and I was only too happy to give the plan a fair trial, and, within a very few days, found immense benefit from it. It may better elucidate the dietary plan if I describe generally what I have sanction to take, and that man must be an extraordinary person who would desire a better table:—

For breakfast, I take four or five ounces of beef, mutton, kidneys, broiled fish, bacon, or cold

meat of any kind except pork, a large cup of tea (without milk or sugar), a little biscuit, or one ounce of dry toast.

For dinner, five or six ounces of any fish except salmon, any meat except pork, any vegetable except potato, one ounce of dry toast, fruit out of a pudding, any kind of poultry or game, and two or three glasses of good claret, sherry, or madeira—champagne, port, and beer forbidden.

For tea, two or three ounces of fruit, a rusk or two, and a cup of tea without milk or sugar.

For supper, three or four ounces of meat or fish, similar to dinner, with a glass or two of claret.

For night-cap, if required, a tumbler of grog (gin, whisky, or brandy, without sugar) or a glass or two of claret or sherry.

This plan leads to an excellent night's rest, with from six to eight hours' sound sleep. The dry toast or rusk may have a tablespoonful of spirit to soften it, which will prove acceptable. Perhaps I did not wholly escape starchy or saccharine matter, but scrupulously avoided those beans, such as milk, sugar, beer, butter, etc., which were known to contain them.

On rising in the morning I take a table-

spoonful of a special corrective cordial, which may be called the Balm of Life, in a wine-glass of water—a most grateful draught, as it seems to carry away all the dregs left in the stomach after digestion, but is not aperient; then I take about 5 or 6 ounces solid and 8 of liquid for breakfast; 8 ounces of solid and 8 of liquid for dinner; 3 ounces of solid and 8 of liquid for tea; 4 ounces of solid and 6 of liquid for supper, and the grog afterward, if I please. I am not, however, strictly limited to any quantity at either meal, so that the nature of the food is rigidly adhered to.

Experience has taught me to believe that these human beans are the most insidious enemies man, with a tendency to corpulence in advanced life, can possess, though eminently friendly to youth. He may very prudently mount guard against such an enemy if he is not a fool to himself, and I fervently hope this truthful, unvarnished tale may lead him to make a trial of my plan, which I sincerely recommend to public notice—not with any ambitious motive, but in sin-

cere good faith, to help my fellow-creatures to obtain the marvelous blessings I have found within the short period of a few months.

I do not recommend every corpulent man to rush headlong into such a change of diet—*certainly not*—but to act advisedly and after full consultation with a physician.

My former dietary table was bread and milk for breakfast, or a pint of tea with plenty of milk and sugar, and buttered toast; meat, beer, much bread (of which I was always very fond) and pastry for dinner; the meal of tea similar to that of breakfast, and generally a fruit tart or bread and milk for supper. I had little comfort, and far less sound sleep.

It certainly appears to me that my present dietary table is far superior to the former—more luxurious and liberal, independent of its blessed effect; but when it is proved to be more healthful, comparisons are simply ridiculous, and I can hardly imagine any man, even in sound health, would choose the former, even if it were not an enemy; but,

when it is shown to be, as in my case, inimical both to health and comfort, I can hardly conceive there is any man who would not willingly avoid it. I can conscientiously assert I never lived so well as under the new plan of dietary, which I should have formerly thought a dangerous extravagant trespass upon health; I am very much better, bodily and mentally, and pleased to believe that I hold the reins of health and comfort in my own hands, and though at sixty-five years of age I cannot expect to remain free from some coming natural infirmity that all flesh is heir to, I cannot at the present time complain of one. It is simply miraculous, and I am thankful to Almighty Providence for directing me, through an extraordinary chance, to the care of a man who could work such a change in so short a time.

Oh that the faculty would look deeper into, and make themselves better acquainted with, the crying evil of obesity—that dreadful tormenting parasite on health and comfort! Their fellow-men might not descend into

early premature graves, as I believe many do, from what is termed apoplexy, and certainly would not, during their sojourn on earth, endure so much bodily, and consequently mental infirmity.

Corpulence, though giving no actual pain, as it appears to me, must naturally press with undue violence upon the bodily viscera, driving one part upon another, and stopping the free action of all. I am sure it did in my particular case, and the result of my experience is briefly as follows :

I have not felt so well as now for the last twenty years.

Have suffered no inconvenience whatever in the probational remedy.

Am reduced many inches in bulk and 35 pounds in weight in thirty-eight weeks.

Come down stairs forward naturally, with perfect ease.

Go up stairs, and take ordinary exercise freely, without the slightest inconvenience.

Can perform every necessary office for myself.

The umbilical rupture is greatly ameliorated, and gives me no anxiety.

My sight is restored—my hearing improved.

My other bodily ailments are ameliorated; indeed, almost passed into matter of history.

I have placed a thank-offering of £50 in the hands of my kind medical adviser for distribution among his favorite hospitals, after gladly paying his usual fees, and still remain under overwhelming obligations for his care and attention, which I can never hope to repay. Most thankful to Almighty Providence for mercies received, and determined to press the case into public notice as a token of gratitude.

I have the pleasure to afford, in conclusion, a satisfactory confirmation of my report, in stating that a corpulent friend of mine, who, like myself, is possessed of a generally sound constitution, was laboring under frequent palpitations of the heart and sensations of fainting, was, at my instigation, induced to

place himself in the hands of my medical adviser, with the same gradual beneficial results. He is at present under the same ordeal, and in eight weeks has profited even more largely than I did in that short period; he has lost the palpitations, and is becoming, so to speak, a new-made man—thankful to me for advising, and grateful to the eminent counselor to whom I referred him—and he looks forward with good hope to a perfect cure.

I am fully persuaded that hundreds, if not thousands, of our fellow-men might profit equally by a similar course; but, constitutions not being all alike, a different course of treatment may be advisable for the removal of so tormenting an affliction.

My kind and valued medical adviser is not a doctor for obesity, but stands on the pinnacle of fame in the treatment of another malady, which, as he well knows, is frequently induced by the disease of which I am speaking; and I most sincerely trust most of my corpulent friends (and there are thousands of corpulent people whom I dare not so rank) may be led

into my tramroad. To any such I am prepared to offer the further key of knowledge by naming the man. It might seem invidious to do so now, but I shall only be too happy, if applied to by letter in good faith, or if any doubt should exist as to the correctness of this statement.

WILLIAM BANTING, SR.,

*Late of No. 27 St. James's Street, Piccadilly,
Now of No. 4 The Terrace, Kensington.*

MAY, 1863.

A D D E N D A .

HAVING exhausted the first edition (1000 copies) of the foregoing pamphlet; and a period of one year having elapsed since commencing the admirable course of diet which has led to such inestimably beneficial results, and, "as I expected and desired," having quite succeeded in attaining the happy medium of weight and bulk I had so long ineffectually sought, *which appears necessary to health at my age and stature*,—I feel impelled, by a sense of public duty, to offer the result of my experience in a second edition. It has been suggested that I should have sold the pamphlet, devoting any profit to charity as more agreeable and useful; and I had intended to adopt such a course, but on reflection feared my motives might be mistaken; I therefore respectfully present this (like the first edition) to the public gratuitously, earn-

estly hoping the subject may be taken up by medical men and thoroughly ventilated.

It may (and I hope will) be as satisfactory to the public to hear, as it is for me to state, that the first edition has been attended with very comforting results to other sufferers from corpulence, as the remedial system therein described was to me under that terrible disease, which was my main object in publishing my convictions on the subject. It has moreover attained a success, produced flattering compliments, and an amount of attention I could hardly have imagined possible. The pleasure and satisfaction this has afforded me are ample compensation for the trouble and expense I have incurred, and I most sincerely trust, "as I verily believe," this second edition will be accompanied by similar satisfactory results from a more extensive circulation. If so, it will inspirit me to circulate further editions, while a corpulent person exists, requiring, as I think, this system of diet, or so long as my motives cannot be mistaken and are thankfully appreciated.

My weight is reduced 46 pounds, and as

the *very gradual reductions* which I am able to show may be interesting to many, I have great pleasure in stating them, believing they serve to demonstrate further the merit of the system pursued.

My weight on 26th August, 1862, was 202 pounds.

	lbs.		lbs.
On 7th September it was	200,	having lost	2
27th " "	197	" "	3 more.
19th October	" 193	" "	4 "
9th November	" 190	" "	3 "
3d December	" 187	" "	3 "
24th " "	" 184	" "	3 "
14th Jan. 1863	" 182	" "	2 "
4th February	" 180	" "	2 "
25th " "	" 178	" "	2 "
18th March	" 176	" "	2 "
8th April	" 173	" "	3 "
29th " "	" 170	" "	3 "
20th May	" 167	" "	3 "
10th June	" 164	" "	3 "
1st July	" 161	" "	3 "
22d " "	" 159	" "	2 "
12th August	" 157	" "	2 "
26th " "	" 156	" "	1 "
12th September	" 156	" "	0 "

Total loss of weight 46 pounds.

My girth is reduced round the waist, in tailor phraseology, $12\frac{1}{4}$ inches, which extent was hardly conceivable even by my own friends, or my respected medical adviser, until I put on my former clothing over what I now wear, which was a thoroughly convincing proof of the remarkable change. These important desiderata have been attained by the most easy and comfortable means, with but little medicine, and almost entirely by a system of diet that formerly I should have thought dangerously generous. I am told by all who know me that my personal appearance is greatly improved, and that I seem to bear the stamp of good health; this may be a matter of opinion or friendly remark, but I can honestly assert that I feel restored in health, "bodily and mentally," appear to have more muscular power and vigor, eat and drink with a good appetite, and sleep well. All symptoms of acidity, indigestion, and heartburn (with which I was frequently tormented) have vanished. I have left off using boot hooks and other such aids, which were

indispensable, but, being now able to stoop with ease and freedom, are unnecessary. I have lost the feeling of *occasional faintness*, and what I think a remarkable blessing and comfort is, that I have been able safely to leave off knee-bandages, which I had worn *necessarily* for twenty past years, and given up a truss almost entirely; indeed, I believe I might wholly discard it with safety, but am advised to wear it at least occasionally for the present.

Since publishing my pamphlet, I have felt constrained to send a copy of it to my former medical advisers, and to ascertain their opinions on the subject. They did not dispute or question the propriety of the system, but either dared not venture its practice upon a man of my age, or thought it too great a sacrifice of personal comfort to be generally advised or adopted; and I fancy none of them appeared to feel the fact of the misery of corpulence. One eminent physician, as I before stated, assured me that increasing weight was a necessary result of advancing years;

another, equally eminent, to whom I had been directed by a very friendly third, who had most kindly but ineffectually failed in a remedy, added to my weight in a few weeks instead of abating the evil. These facts lead me to believe the question is not sufficiently observed or even regarded.

The great charm and comfort of the system is, that its effects are palpable within a week of trial, which creates a natural stimulus to persevere for a few weeks more, when the fact becomes established beyond question.

I only entreat all persons suffering from corpulence to make a fair trial for just one clear month, as I am well convinced they will afterward pursue a course which yields such extraordinary benefit, till entirely and effectually relieved, and, be it remembered, by the sacrifice merely of simple for the advantage of more generous and comforting food. The simple dietary evidently adds fuel to fire, whereas the superior and liberal seems to extinguish it.

I am delighted to be able to assert that I have proved the great merit and advantage

of the system, by its results in several other cases similar to my own, and have full confidence that within the next twelve months I shall know of many more cases restored from the disease of corpulence, for I have received the kindest possible letters from many afflicted strangers and friends, as well as similar personal observations from others whom I have conversed with, and assurances from most of them that they will kindly inform me the result for my own private satisfaction. Many are practicing the diet after consultation with their own medical advisers; some few have gone to mine, and others are practicing upon their own convictions of the advantages detailed in the pamphlet, though I recommend all to act advisedly, in case their constitutions should differ. I am, however, so perfectly satisfied of the great unerring benefits of this system of diet, that I shall spare no trouble to circulate my humble experience. The amount and character of my correspondence on the subject has been strange and singular, but most satisfactory to my mind and feelings.

I am now in that happy, comfortable state that I should not hesitate to indulge in any fancy in regard to diet, but if I did so should watch the consequences, and not continue any course which might add to weight or bulk and consequent discomfort.

Is not the system suggestive to artists and men of sedentary employment who cannot spare time for exercise, consequently become corpulent, and clog the little muscular action with a superabundance of fat, thus easily avoided?

Pure genuine bread may be the staff of life, as it is termed. It is so, particularly in youth; but I feel certain it is more wholesome in advanced life if thoroughly toasted, as I take it. My impression is, that any starchy or saccharine matter tends to the disease of corpulence in advanced life, and whether it be swallowed in that form or generated in the stomach, that all things tending to these elements should be avoided, of course always under sound medical authority.

WILLIAM BANTING.

CONCLUDING ADDENDA.

It is very satisfactory to me to be able to state that I remained at the same standard of bulk and weight for several weeks after the 26th August, when I attained the happy natural medium, since which time I have varied in weight from two to three pounds, more or less. I have seldom taken the morning draught since that time, and have frequently indulged my fancy, *experimentally*, in using milk, sugar, butter, and potatoes—indeed, I may say all the forbidden articles *except beer*, in moderation—with impunity, but always as an exception, not as a rule. This deviation, however, convinces me that I hold the power of maintaining the happy medium in my own hands.

A kind friend has lately furnished me with a tabular statement in regard to weight as

proportioned to stature, which, under present circumstances and the new movement, may be interesting and useful to corpulent readers:—

STATURE.				WEIGHT.			
5 feet	1	should be	8 stone	8	or 120 pounds.		
5	"	2	"	9	"	0	" 126 "
5	"	3	"	9	"	7	" 133 "
5	"	4	"	9	"	10	" 136 "
5	"	5	"	10	"	2	" 142 "
5	"	6	"	10	"	5	" 145 "
5	"	7	"	10	"	8	" 148 "
5	"	8	"	11	"	1	" 155 "
5	"	9	"	11	"	8	" 162 "
5	"	10	"	12	"	1	" 169 "
5	"	11	"	12	"	6	" 174 "
6	"	0	"	12	"	10	" 178 "

This tabular statement, taken from a mean average of 2648 healthy men, was formed and arranged for an insurance company by the late Dr. John Hutchinson. It answered as a pretty good standard, and insurances were regulated upon it. His calculations were made upon the volume of air passing in and out of the lungs, and this was his guide as to how far the various organs of the body were in health,

the lungs in particular. It may be viewed as some sort of probable rule, yet only on average,—some in health weighing more many pounds than others. It must not be looked upon as infallible, but only as a sort of general reasonable guide to Nature's great and mighty work.

On a general view of the question, I think it may be conceded that a frame of low stature was hardly intended to bear very heavy weight. Judging from this tabular statement, I ought to be considerably lighter than I am at present. I shall not, however, covet or desire at such a result; nor, on the other hand, shall I be alarmed if I increase a little more in weight and bulk.

I am certainly more sensitive to cold since I have lost the superabundant fat, but this is remediable by another garment, far more agreeable and satisfactory. Many of my friends have said, "Oh! you have done well so far, but take care you don't go too far." I fancy such a circumstance, with such a dietary, very unlikely, if not impossible; but

proportioned to stature, which, under present circumstances and the new movement, will be interesting and useful to corpulent readers:—

STATURE.				WEIGHT.			
5 feet	1	should be	8 stone	8 or	120	pounds.	
5 "	2	"	9 "	0 "	126	"	
5 "	3	"	9 "	7 "	133	"	
5 "	4	"	9 "	10 "	136	"	
5 "	5	"	10 "	2 "	142	"	
5 "	6	"	10 "	5 "	145	"	
5 "	7	"	10 "	8 "	148	"	
5 "	8	"	11 "	1 "	155	"	
5 "	9	"	11 "	8 "	162	"	
5 "	10	"	12 "	1 "	169	"	
5 "	11	"	12 "	6 "	174	"	
6 "	0	"	12 "	10 "	178	"	

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See Hutchinson

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feeling that I have now nearly attained the right standard of bulk and weight proportional to my stature and age (between 10 and 11 stone), I should not hesitate to partake of a fattening dietary occasionally, to preserve that happy standard, if necessary; indeed, I am allowed to do so by my medical adviser; but I shall always observe a careful watch upon myself, to discover the effect, and act accordingly, so that if I choose to spend a day or two with Dives, so to speak, I must not forget to devote the next to Lazarus.

The remedy may be as old as the hills, as I have since been told, but its application is of very recent date; and it astonishes me that such a light should have remained so long unnoticed and hidden, as not to afford a glimmer to my anxious mind in a search for it during the last twenty years, even in directions where it might have been expected to be known. I would rather presume it is a new light, than that it was purposely hidden merely because the disease of obesity was not immediately dangerous to existence, nor

thought to be worthy of serious consideration. Little do the faculty imagine the misery and bitterness to life through the parasite of corpulence or obesity.

I can now confidently say that *quantity* of diet may be safely left to the natural appetite, and that it is the *quality* only which is essential to abate and cure corpulence. I stated the quantities of my own dietary because it was part of a truthful report; but some correspondents have doubted whether it should be more or less in their own cases, a doubt which would be better solved by their own appetite, or medical adviser. I have heard a graphic remark by a corpulent man, which may not be inappropriately stated here, *that big houses were not formed with scanty materials*. This, however, is a poor excuse for self-indulgence in improper food, or for not consulting medical authority.

The approach of corpulence is so gradual that, until it is far advanced, persons rarely become objects of attention. Many may have even congratulated themselves on their comely

appearance, and have not sought advice or a remedy for what they did not consider an evil, for an evil I can say most truly it is, when in much excess, to which point it must, in my opinion, arrive, unless obviated by proper means.

Many have wished to know (as future readers may) the nature of the morning draught, or where it could be obtained; but believing it would have been highly imprudent on my part to have presumed that what was proper for my constitution was applicable to all indiscriminately, I could only refer them to a medical adviser for any aid beyond the dietary; assuring them, however, it was not a dram, but of an alkaline character.

Some, I believe, would willingly submit to even a violent remedy, so that an immediate benefit could be produced; this is not the object of the treatment, as it cannot but be dangerous, in my humble opinion, to reduce a disease of this nature suddenly; they are probably, then, too prone to despair of success, and consider it as unalterably connected

with their constitution. Many under this feeling doubtless return to their former habits, encouraged so to act by the ill-judged advice of friends who, I am persuaded (from the correspondence I have had on this most interesting subject), become unthinking accomplices in the destruction of those whom they regard and esteem.

The question of four meals a day, and the night-cap, has been abundantly and amusingly criticised. I ought perhaps to have stated, as an excuse for such liberality of diet, that I breakfast between eight and nine o'clock, dine between one and two, take my slight tea meal between five and six, sup at nine, and only take the night-cap when inclination directs. My object in naming it at all was, that, as a part of a whole system, it should be known, and to show it is not forbidden to those who are advised that they need such a luxury; nor was it injurious in my case. Some have inquired whether smoking was prohibited. It was not.

It has also been remarked that such a diet-

ary as mine was too good and expensive for a poor man, and that I had wholly lost sight of that class; but a very poor corpulent man is not so frequently met with, inasmuch as the poor cannot afford the simple inexpensive means for creating fat; but when the tendency does exist in that class, I have no doubt it can be remedied by abstinence from the forbidden articles, and a moderate indulgence in such cheap stimulants as may be recommended by a medical adviser, whom they have ample chances of consulting gratuitously.

I have a very strong feeling that gout (another terrible parasite upon humanity) might be greatly relieved, if not cured entirely, by this proper natural dietary, and sincerely hope some person so afflicted may be induced to practice the harmless plan for three months (as I certainly would if the case were my own) to prove it; but not without advice.

My impression, from the experiments I have tried on myself of late, is, that saccharine matter is the great moving cause of

fatty corpulence. I know that it produces in my individual case increased weight and a large amount of flatulence, and believe that not only sugar, but all elements tending to create saccharine matter in the process of digestion, should be avoided. I apprehend it will be found in bread, butter, milk, beer, port wine, and champagne; I have not found starchy matter so troublesome as the saccharine, which, I think, largely increases acidity as well as fat; but, with ordinary care and observation, people will soon find what food rests easiest in the stomach, and avoid that which does not, during the probationary trial of the proposed dietary. Vegetables and ripe or stewed fruit I have found ample aperients. Failing this, medical advice should be sought.

The word "*parasite*" has been much commented upon as inappropriate to any but a living creeping thing (of course I use the word in a figurative sense, as a burden to the flesh); but if fat is not an insidious creeping enemy, I do not know what is. I should

have equally applied the word to gout, rheumatism, dropsy, and many other diseases.

Whereas hitherto the appeals to me to know the name of my medical adviser have been very numerous, I may say hundreds, which I have gladly answered, though forming no small item of the expense incurred; and whereas the very extensive circulation expected of the third edition is likely to lead to some thousands of similar applications, I feel bound, in self-defense, to state that the medical gentleman to whom I am so deeply indebted is Mr. Harvey, Soho Square, London, whom I consulted for deafness. In the first and second editions, I thought that to give his name would appear like a puff, which I know he abhors; indeed, I should prefer not to do so now, but cannot, in justice to myself, incur further probable expense (which I fancy inevitable), besides the personal trouble, for which I cannot afford time, and therefore feel no hesitation to refer to him as my guarantee for the truth of the pamphlet.

One material point I should be glad to

impress on my corpulent readers—it is, to get accurately weighed at starting upon the fresh system, and continue to do so weekly or monthly; for the change will be so truly palpable by this course of examination, that it will arm them with perfect confidence in the merit and ultimate success of the plan. I deeply regret not having secured a photographic portrait of my original figure in 1862, to place in juxtaposition with one of my present form. It might have amused some, but certainly would have been very convincing to others, and astonishing to all, that such an effect should have been so readily and speedily produced by the simple natural cause of exchanging a meager for a generous dietary under proper advice.

I shall ever esteem it a great favor if persons relieved and cured, as I have been, will kindly let me know of it; the information will be truly gratifying to my mind. That the system is a great success I have not a shadow of doubt, from the numerous reports sent, with thanks, by strangers as well as

friends from all parts of the kingdom ; and I am truly thankful to have been the humble instrument of disseminating the blessing and experience I have attained through able counsel and natural causes, by proper perseverance.

I have now finished my task, and trust my humble efforts may prove to be good seed well sown, that will fructify and produce a large harvest of benefit to my fellow-creatures. I also hope the faculty generally may be led more extensively to ventilate this question of corpulence or obesity, so that instead of one, two, or three able practitioners, there may be as many hundreds distributed in the various parts of the United Kingdom. In such case, I am persuaded that those diseases, like Reverence and Golden Pippins, will be very rare.

APPENDIX.

SINCE publishing the third edition of my pamphlet I have earnestly pressed my medical adviser to explain the reasons for so remarkable a result as I and others have experienced from the dietary system he prescribed, and I hope he may find time to do so shortly, as I believe it would be highly interesting to the faculty and the public generally. He has promised this at his leisure.

Numerous applications having been made to me on points to which I had not alluded, in which my correspondents felt some doubt and interest, I take this opportunity of making some few corrections in my published dietary.

I ought, "it seems," to have excepted veal, owing to its indigestible quality, as well as pork for its fattening character; also, her-

rings and eels (owing to their oily nature), being as injurious as salmon. In respect to vegetables, not only should potatoes be prohibited, but parsneps, beetroot, turnips, and carrots. The truth is, I seldom or never partook of these objectionable articles myself, and did not reflect that others might do so, or that they were forbidden. Green vegetables are considered very beneficial, and I believe should be adopted at all times. I am indebted to the *Cornhill Magazine* and other journals for drawing my attention to these dietetic points. I can now also state that eggs, if not hard boiled, are unexceptionable; that cheese, if sparingly used, and plain boiled rice, seem harmless.

Some doubts have been expressed in regard to the vanishing point of such a descending scale, but it is a remarkable fact that the great and most palpable diminution in weight and bulk occurs within the first forty-eight hours; the descent is then more gradual. My own experience, and that of others, assures me (if medical authority be first con-

sulted as to the complaint) that with such slight extraneous aid as medicine can afford, Nature will do her duty, and only her duty: firstly, by relieving herself of immediate pressure, she will be enabled to move more freely in her own beautiful way; and, secondly, by pursuing the same course, to work speedy amelioration and final cure. The vanishing point is only when the disease is stopped and the parasite annihilated.

It may interest my readers to know that I have now apparently attained the standard natural at my age (10 stone 10, or 150 lbs.), as my weight now varies only to the extent of 1 lb., more or less, in the course of a month. According to Dr. Hutchinson's tables, I ought to lose still more, but cannot do so without resorting to medicine; and, feeling in sound vigorous health, I am perfectly content to wait upon Nature for any further change.

In my humble judgment the dietary is the principal point in the treatment of corpulence, and it appears to me, moreover, that if prop-

erly regulated it becomes in a certain sense a medicine. The system seems to me to attack only the superfluous deposit of fat, and, as my medical friend informs me, purges the blood, rendering it more pure and healthy, strengthens the muscles and bodily viscera, and I feel quite convinced sweetens life, if it does not prolong it.

It is truly gratifying to me to be able now to add that many other of the most exalted members of the faculty have honored my movement in the question with their approbation.

I consider it a public duty further to state that Mr. Harvey, whom I have named in the 44th page as my kind medical adviser in the cure of corpulence, is not Dr. John Harvey, who has published a pamphlet on corpulence assimilating with some of the features and the general aspect of mine, and which has been considered (as I learn from correspondents who have obtained it) the work of my medical friend. It is not.

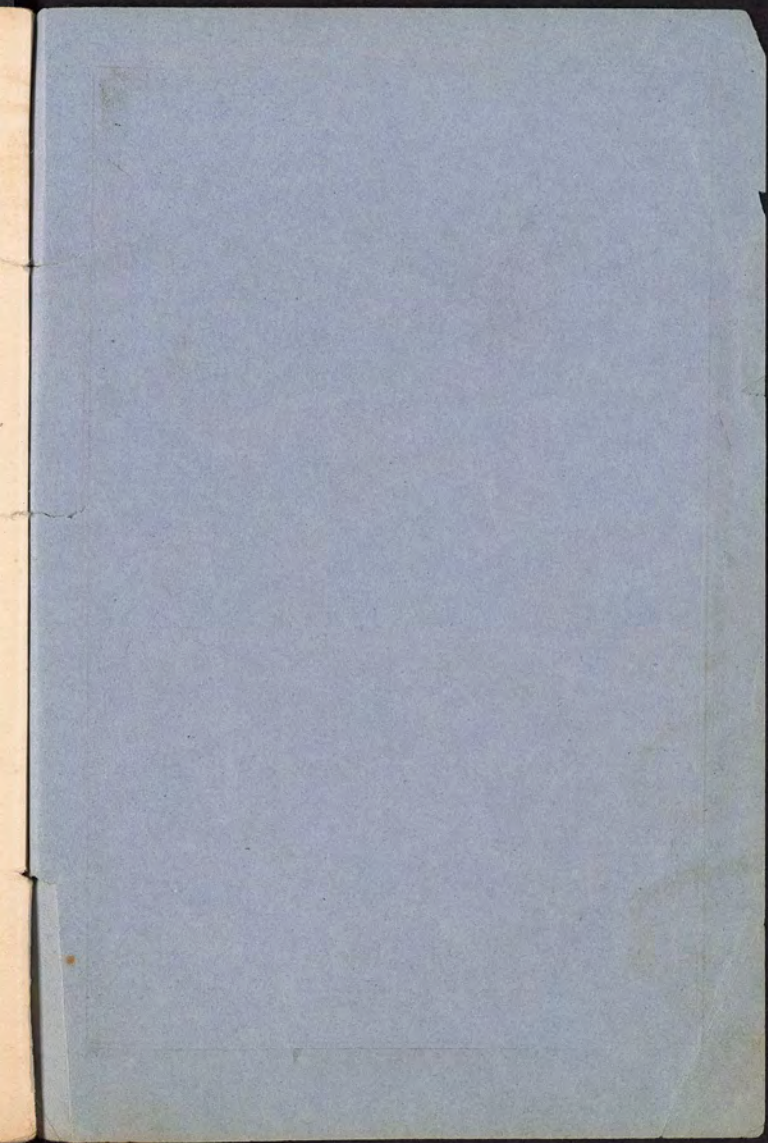
I am glad, therefore, to repeat that my medical adviser was, and is still, Mr. WILLIAM HARVEY, F.R.C.S., No. 2 Soho Square, London, W.

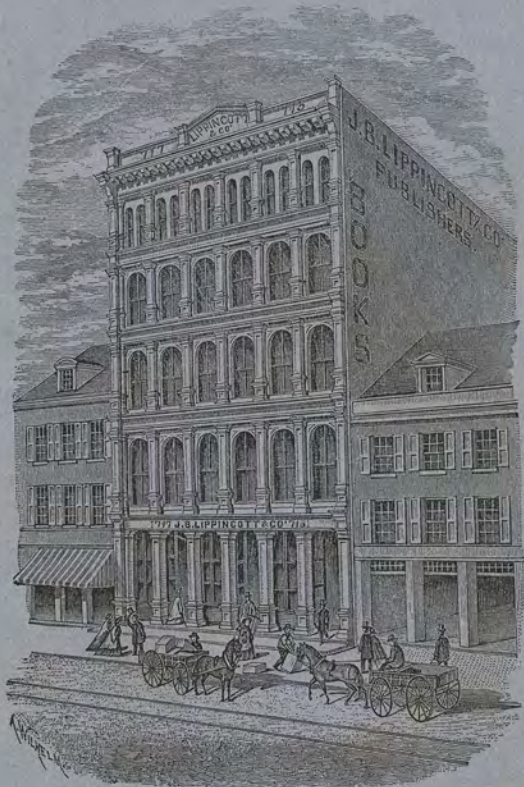
WILLIAM BANTING.

APRIL, 1864

I am glad to hear that my
 friend is well and still in
 the same place. I hope to hear
 from you soon.

Yours truly,
 Wm. L. Garrison





J. B. LIPPINCOTT & CO.,
PHILADELPHIA.

1875

ARTICLES.



MEDICAL NEWS.

ORIGINAL ARTICLES.

Poisoning from Eating Honey. By SAMUEL B. SMALLWOOD, M.D., of Huntington, Suffolk Co., Long Island.

On Feb. 6th, Mrs. B. invited several of her relatives to tea, and among the many delicacies provided was a very fine specimen of honey in an unbroken comb. Of this they all partook sparingly. Shortly after the meal one of the gentlemen, who was smoking, experienced a burning sensation in his throat, followed by a tingling and burning of the skin and some nausea, which he attributed to the heat of the room and the cigar he was smoking. The nausea, however, increased so rapidly that he remarked to his brother that he feared he would be stomach-sick. A lady overheard the remark, and expressed herself as suffering from the same disagreeable sensation. I was called about an hour and a half after the meal, and found that the gentleman had vomited twice very freely, but was feeling better; complained still of burning sensation in the skin, stomach, and fauces, some unsteadiness of gait, vertigo, dimness of vision, but able to be up. His pulse was very feeble, beating forty-eight per minute. The lady had vomited three times—first the food, then mucus and bile from the stomach. She complained of the same general symptoms, only in an exaggerated degree; marked inability to control the movements of the lower extremities. She could move them or prevent their movements, but was unable to place her foot on the base of the stove until after several attempts, and then the foot would immediately slide from its position to the floor. Her pulse forty-eight, and sensation of great prostration present. At this time, some two hours after the meal, the whole company, with the exception of a little girl ten years old who had eaten very sparingly, had experienced the same premonitory symptoms in the throat, fauces, and stomach, together with tingling in the skin. I examined their pulses, and found them all varying from seventy-two to eighty-four, except the two who had been stomach-sick. Some four hours after

Dr. Barton, formerly of
Univ. of Pa., narrated instances
of poisonous honey made by
bees feeding on *Kalmia* flowers
in New Jersey.

HOSPITAL NOTES AND GLEANINGS.

Carcinoma Uteri: Uterine Hemorrhage controlled by Hypodermic Injection of Ergotin.—Elizabeth S., æt. thirty-three, was admitted into London Hospital, November 10th, 1874. She had been married fifteen years, and has been a widow for eight years. During her seven years of married life she bore five children. She first menstruated at the age of fifteen, and suffered from dysmenorrhœa, until her marriage at eighteen. She enjoyed moderately good health till seventeen months ago, when considerable pain came on at her menstrual period, with profuse bleeding. Hemorrhage had continued on and off ever since, but always worse at her periods, and was attended with sharp cutting and expulsive pains, especially referred to her right side. She had had a discharge for about the same time, but said that it had never been "particularly" foul smelling. Examination *per vaginam* revealed a very advanced malignant disease all around the cervix, and extending high up into the fundus. Her constitutional signs, also, were indicative of the character of her malady. During her stay in hospital she had two hemorrhages. The first followed an examination with the sound; it was not excessive, and was stopped by the introduction of ice. The next was more severe, and could not be arrested till the perchloride of iron was applied. Hemorrhage returned on January 8, 1875; it came on severely about seven o'clock P. M. Ice was tried, but to no purpose; plugging had not the slightest effect; the resident accoucheur was, therefore, compelled at last to swab the whole of the interior of the uterus with perchloride of iron. This took some time to arrest the flow of blood which was issuing freely from the irregular and scarcely distinguishable os. A plug of cotton-wool, saturated with solution of perchloride of iron, was left in the cervix, and the hemorrhage ceased; since then she had two hemorrhages. On February 1st, the first took place, and was very profuse. The resident accoucheur injected at once two of Dr. Sansom's ergotin disks into the forearm, dissolved and in-

the meal, one of the gentlemen complained bitterly of his feeling of prostration associated with pain in the bowels. His pulse now had receded from eighty-four to forty-eight, and finally went as low as forty. On attempting to move, he fell on the floor in a state of syncope, but recovering consciousness vomited freely and felt relieved. He vomited several times, and soon fell asleep, waking next morning with only a remembrance of the evening's dissipation. Another gentleman was attacked in the same manner, and, falling, struck the base of the stove, cracking the plate and inflicting a wound of the scalp. Some escaped without vomiting, but experienced great prostration, slow pulse, and pain in bowels. There was no diarrhoea. The taste of the honey was unaffected, but I noticed it left a stinging, burning sensation in the fauces and oesophagus, although I partook very sparingly. I find, on inquiry, that honey is reported as frequently poisoned by the bees extracting their supplies from the *Nermer Oleander*, the *Azalea Pentica*, *Daphne Mezereum*, *Aconitum*, and *Kalmia Latifolia*. The description of poisoning from the last, the *Kalmia Latifolia*, or Mountain Laurel, coincides perfectly with the symptoms presented by my patients; and, as that is present in large quantities in this locality, I think the honey was undoubtedly poisoned by the bees frequenting this plant when in blossom. I find, also, upon inquiry, that Dr. B. S. Barton has recorded an instance in which the honey eaten proved poisonous, with the same symptoms as I have enumerated, and which he attributed to the same cause. It is, however, very surprising that so small a quantity should seriously threaten life. The largest quantity eaten was not over two tablespoonfuls. Some had eaten only one tablespoonful, and yet suffered severely. The general symptoms complained of were as follows: Dryness of throat, with burning sensation extending to the stomach; tingling of the skin (described as being produced by hot needles); headache, dizziness, dimness of vision, coldness of extremities, sickness of stomach, followed by vomiting; slowness of pulse, forty-eight per minute; respiration regular, pupils natural, ina-

bility to walk without reeling, numbness of the extremities, urine scanty, high-coloured, and scalding. One experienced a stuffed sensation in the nose, similar to cold in the head; another described his symptoms as very similar to intoxication from alcohol; all, however, made good recoveries, and good resolutions never again to indulge in honey.

then residing, in Wisconsin; he prescribed for the trouble, but gave no definite opinion of its nature. Receiving no benefit, he consulted various unprofessionals, quacks, and publications, getting from them the idea that his condition required no less a remedy than castration. This, after weeks of consideration, he proceeded to perform, with his own hands and way. After providing himself with

sequence of the rope to the bucket breaking, as they were descending into the "Copper Mine," near "Boldersville, Ches. and Ohio R. R." Two of the men were killed instantly. When I saw the survivor, he was entirely unconscious from concussion of the brain. I found four ribs broken, fracture of the radius, and dislocation of the humerus, downwards and backwards. About twenty-four hours afterwards, all symptoms of concussion passed off, but a severe attack of pneumonia followed, which I feared would terminate fatally, but a good constitution and unabated attention brought him through safely, and to-day he is as well as ever.

There is no mistake about the distance this man fell, as I saw it accurately measured.

DOMESTIC INTELLIGENCE.

Death from Chloroform.—Dr. J. Buist, of Nashville, Tennessee, reports (*Nashville Journ. of Med. and Surgery*, June, 1875) the case of a lad, aged 11 years, to whom chloroform was administered for the reduction of paraphimosis. Two teaspoonfuls of chloroform were administered on a napkin and the napkin was twice replenished with about the same quantity each time, in the course of three or four minutes. "Being then apparently under the influence of the chloroform, although breathing lightly, I gave the cloth to his father to hold. On making an effort to relieve the parts, the patient immediately raised himself up in the bed, and was nearly awake. I had then to begin over again, and poured out two more teaspoonfuls, and gave it as before. He now came under it very soon, and I handed the towel to his mother, who held it about two inches from his face.

"Keeping my eye upon the patient's face, I effected reduction in a few seconds, with my hands, while a negro man held the legs behind me. As soon as I found the glans slipping back, I directed the chloroform removed; and at this instant observed that his respiration was suspended and that the pulse had ceased beating.

but induces sleep (a powerful aid towards recovery); and during its use he has never seen trismus or dysphagia ever become severe, even in fatal cases. We may therefore safely depend, he says, upon relieving two of the most distressing symptoms, even if we do not save life, by the administration of this remedy.

Hydrate of Chloral in Obstetrics.—Dr. DUJARDIN-BAUMETZ has recorded, in the last number of the *Gazette Médicale de Paris*, several cases in which the use of hydrate of chloral was remarkably successful. In the first case (primipara, protracted cephalalgia, oedema of legs and eyelids, albumen in urine) a fit of eclampsia supervened two days before the labour, and lasted ten minutes. An enema with one drachm of chloral was administered, and the patient fell asleep. On the day of the accouchement, as a precaution and to avoid a recurrence of the fit, two enemata, with one drachm of chloral in each, were administered at two hours' interval. No fit occurred, and, furthermore, the contractions were quite painless, though they were even more intense and frequent than normal. In the second case, where albumen was found in the urine, there existed the usual conditions for eclampsia. Hydrate of chloral was administered as a preventive, and no fit occurred. Lastly, in several other cases, where the patients were excitable, nervous, and weak, Dr. Dujardin-Baumetz gave chloral with the greatest benefit, in doses of from one-half to one drachm. It always had the effect of soothing the pain, and, moreover, of accelerating the process of labour. Dr. Baumetz much prefers chloral to chloroform in eclampsia, but recommends that it should be administered in sufficiently strong doses (two and even three drachms).—*The Lancet*, April 12, 1873.

Convulsions in an Infant due to the abuse of Alcohol in the Nurse.—M. VERNAY relates a very striking case of the mischievous consequences which may result from the abuse of wine-drinking in a nurse. A child was taken with convulsions, and during five days all sorts of means, like calomel, bromide of potassium,

the hot bath, musk, belladonna, etc. were uselessly employed. M. Vernay was eventually told that the nurse drank six to eight glasses of French wine in the day, and had some more at night. It occurred to him that the convulsions in the child might be due to the alcoholic liquid thus absorbed by the nurse. The wine was ordered to be stopped, and the convulsions ceased immediately after.—*Lancet*, April 26, 1873, from *Lyon Médicale*.

—
Ammonia in Workshops as a Preventive of Mercurial Poisoning.—In a recent communication to the Paris Academy of Sciences, Dr. Meyer made known the excellent results which he had obtained in preventing all symptoms of mercurial poisoning in the looking-glass manufactory of St. Gobain by sprinkling the floor with ammonia. He cannot explain the preservative action of ammonia, and it was accidentally that he discovered this effect; but he states that during the five years that it has been employed at St. Gobain, not one case of poisoning has been observed among the workmen, whilst there is a marked amendment in the symptoms of those who were previously affected. About half a litre of common liquid ammonia is simply to be sprinkled on the floor of the workshop every evening after the day's work.—*Lancet*, April 26, 1873.

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Death from Chloroform.—At the meeting of the Société de Chirurgie of April 30, M. LÉON LE FORT communicated a case of death from chloroform. The subject was a man thirty years of age, apparently in very good health, who applied at the hospital on account of a fissure of the anus. M. Le Fort proposed treating it by forced dilatation, to which the patient readily agreed, but as he had just eaten, the operation was put off until the next visit. On that day chloroform was administered without anything remarkable occurring, the patient falling into a calm and peaceful sleep, the pulse and respiration being regular and normal. The dilatation having been accomplished, M. Le Fort examined the condition of the patient again, and found that he continued to sleep in a manner that caused no uneasiness. A few instants afterwards, how-

GIVING MEDICINES TO THE MOTHER FOR THE SUCKLING INFANT.

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DR. LEWALD has, says the *Lyon Medicale*, investigated the elimination, by the milk of the mother, of iron, bismuth, iodine and its compounds, arsenic, lead, zinc, antimony, mercury, alcohol, and several narcotics. His numerous experiments were made in the goat. A certain dose of the medicine was administered to the animal, after which the milk was examined. The principal conclusions which the author has arrived at are : 1. A larger quantity of iron can be administered to the infant through the mother's milk than by any other means. 2. Bismuth likewise is eliminated by the milk, but in very small quantity. 3. Iodine does not appear in the milk until ninety-six hours after taking it ; the iodide of potassium given in doses of forty grains per diem appears four hours after ingestion, and continues to be eliminated for eleven days. 4. Arsenic appears in the milk at the end of seventeen hours, and its elimination had not ceased after sixty hours. 5. Though one of the most insoluble preparations, the oxide of zinc is nevertheless eliminated by the milk, and it is probable that this is also the case with the other preparations of zinc ; fifteen grains of oxide of zinc were found in the milk at the end of from four to eight hours, and it disappears sooner than iron, because no trace of it could be discovered after fifteen or sixteen hours. 6. The elimination of antimony is an undeniable fact, and it is well to bear this in mind during the period of nursing ; the same holds true in regard to mercurial preparations. 7. That alcohol and the narcotics are eliminated by the milk has not been demonstrated. Sul-

ried the earliest attention of that great optician.)—The new great reflector at the Paris Observatory is said to turn out very satisfactorily. The movable part weighs nine tons, the speculum of silvered glass half a ton, its diameter being 120 centimetres ($47\frac{1}{4}$ inches), and focal length 6·8 metres (22 ft. 4 in.) The front view has been adopted. It is said to give good definition of minute stars; though we may be pardoned for suggesting that if it was finished by the method of retouching devised by Léon Foucault, its figure is hardly likely to equal those worked by the direct process adopted by the most eminent makers in England. This magnificent instrument, which is protected, when not in use, by a gigantic iron cover, movable on rails, has been six years in construction, at an expense of 8000*l.*, of which one quarter was absorbed in the speculum alone. Our neighbors, in the midst of their political difficulties and social distresses, have shown a noble example of scientific munificence, which we earnestly desire to see followed among ourselves, and we cordially wish the new telescope success.

THE NEW OBSERVATORY AT VIENNA.

A LETTER from Dr. de La Rue to the Royal Astronomical Society gives interesting details concerning the new Observatory at Vienna. The old one is situated among the busy streets of that city; it was founded in 1753, and rebuilt in 1826–27; but its site renders it at present quite unfit for accurate astronomical work. M. von Littrow, the Director, urged the need of a new site and another building upon the Austrian Government, and Prof. Weiss visited the public and private observatories of England and this country before

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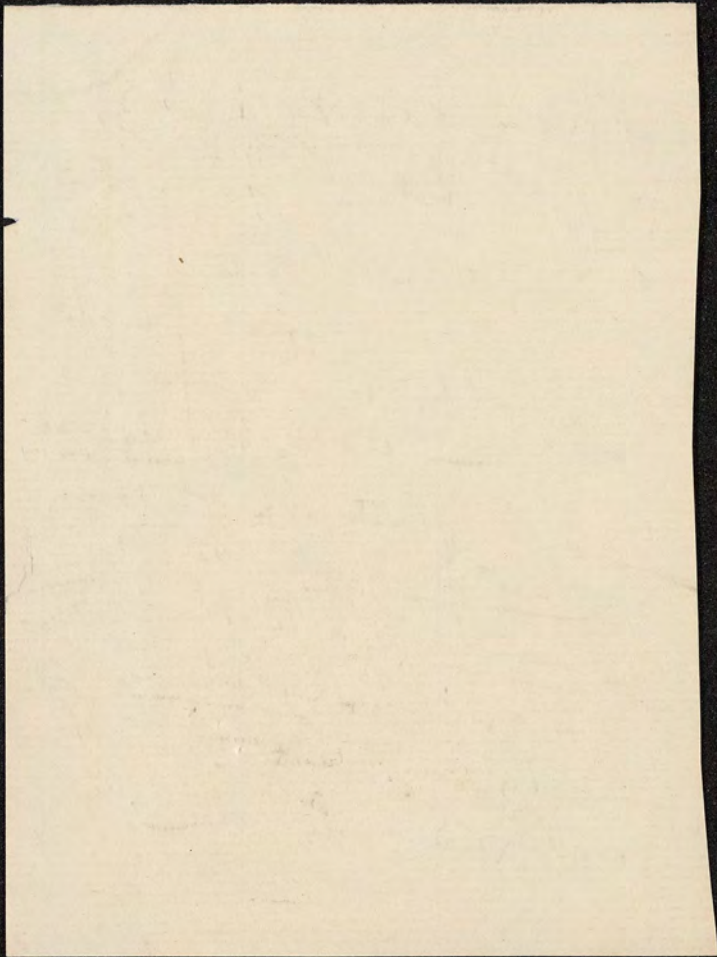
is made to turn in a lathe, and as the brush rapidly revolves, an atmosphere of dust is thrown in the face of the worker. The inhalation causes a slight bronchial irritation and the expectoration of a phlegm which is often tinged of a rouge color

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phate of quinine is eliminated very easily; a child suffering from intermittent fever was cured by administering quinine to the nurse.

London Lancet 1875,
mentions that in June of that
year, the inhabitants of a
part of Rome suffered much
with vomiting, pains in bowels, diarr-
hoea — traced to goats' milk;
the goats' pasture contained
Cornicum maculatum & Colchicum
autumnale, which showed marks
of their nibbling. Colchicine was
found by Prof. Ratti in the
vomiting & in the milk,



MILK AS A VEHICLE OF DISEASE.

THAT typhoid fever may be propagated by infected milk was proved beyond a doubt in England last summer, and it is now asserted by eminent German and French physiologists that milk from a cow suffering with tubercular disease may transmit the malady to the systems of persons drinking it. In the *Archiv für Exp. Pathol.* a series of experiments are described by Dr. Klebs, which show that tuberculosis may thus be produced in various animals. The affection generally begins with intestinal catarrh, followed by tuberculization of the mesenteric ganglia, the liver, the spleen, and ending in extensive miliary tuberculosis of the thoracic organs. Infection by means of the milk may be without result in vigorous organisms; and the author has even seen full-formed tubercles disappear through absorption and cicatrization. It is likely, adds Dr. Klebs, that the tubercular virus is contained in varying proportions in the milk of cows which are more or less diseased, and the scrofulosis may occur, in children born without tubercle, through the milk of an unhealthy mother or wet nurse. In conclusion, the author expresses the view that the virus is contained in the serum of milk, in a dissolved state, and that it is not destroyed by boiling, which is ordinarily insufficient.

At a late meeting of the French Association for the Advancement of Science M. Chaveau gave a demonstration of the transmission of tuberculosis by the digestive organs. Repeated observations enabled him to state that if the healthy young of animals susceptible of tuberculosis were fed with food with which the matter of tubercle was mixed, they would all exhibit the disease in various organs. In anticipation of this meeting, he had purchased some healthy calves; and, having fed them as described, on slaughtering them sixty days after the first ingestion the lymphatic system was found extensively tuberculized, while caseous deposits existed in the lungs. This M. Chaveau demonstrated conclusively, and he is supported in his inferences by the independent series of experiments carried on by Dr. Klebs, in Germany, to which we have alluded above.

Commenting on these researches, an English journal remarks:—

“If the facts are not overstated, the conclusions

not differ greatly, either in quality or in price, from those commonly used in Germany. At present, however, they average much better in quality than they did a few years ago. Indeed the state of the fertilizer market in England, fifteen years ago or more, was just about what it is in America to-day, as appears from a comparison of statistics. In reply to the question as to what he considered the cause of this great improvement, he replied, "Competition." "But do you not attribute it in great measure to the increase of knowledge on the part of farmers, as to what constitutes good fertilizers, and to their increased vigilance in securing such?" "Certainly," was the answer. "The one is the result of the other; years ago farmers used to buy their guanos and superphosphates without much reference to what chemical analysis would say of them, looking rather to the way that they were recommended, or their practical experience with them, and to the money they cost per ton. By this plan, manufacturers were tempted to make inferior articles, and sell them at cheap rates. But farmers have learned that a guano with twelve per cent. of nitrogen is worth more than one with only ten per cent., and that a real superphosphate containing soluble phosphoric acid is worth more than one in which the phosphoric acid is insoluble, and they therefore give the preference to such articles. The result is a competition based upon goodness of quality, rather than low price. And so a ton of superphosphate or bone-dust costs no more than it used to, and is more valuable by half, and further, by this means, the inferior articles and humbugs by which our markets have been infested are more effectually kept away." No man in England is better prepared to judge of these matters than Dr. Voelcker, for it is in great measure to the efforts of the Royal Agricultural Society, in diffusing agricultural knowledge, and of such men as its chemist, Dr. Voelcker, that these improvements are due.

The same rules hold good in Germany as in England. Professor Eichorn of Berlin, who from his official relation to the Prussian Board of Agriculture, as well as from his long experience in the agricultural experiment stations, is as well prepared to judge as perhaps any one, remarked that while he considered the control system exercised by the experiment stations, through anal-

to be derived from them are most startling. The precise article of diet of universal use in all nations and climes, the natural food of the infant, and the most nourishing form in which the invalid can take sustenance, instead of being one of the best agents in strengthening the patient in consumption, *may* be the very means of propagating that too prevalent disease.

“ An immediate practical result of these investigations will be not only to strengthen the hands of authorities in their endeavor to secure to the public unadulterated milk, but to direct more particularly their attention to the sources from which milk is liable to be contaminated. The general law that applies to manufactures, that the value of the product is immensely affected by the care used in the mode of the process, it appears, is equally applicable to the manufacture and management of the animal product, milk. It can be the source of strength or disease — a means of life or death, as we make it. As the machine must be in order to weave the web, so the animal must be in health to produce good milk. And to maintain that supply every essential of proper food, pure water, and fresh air must be continued; while the product must be treated equally carefully, and kept until it reaches the consumer under the conditions necessary to free it from all impurities, or from contact therewith.”

comes in the way of the brush on the locomotive ; and, on contact, a current flows, the whistle is made to sound, and continues blowing until the engineer stops it.

A NEW SUBMARINE VESSEL. — A French industrial journal describes a submarine vessel which was invented in Paris during the siege, but not then brought into use. It is oblong in shape, both ends being cylinders in which pistons can be moved out and in, thus varying the volume of air, and making the vessel rise or sink as may be desired. To prevent the sea-water interfering with the action of the pistons, the internal surface of the cylinder is protected by an arrangement like the bellows of an accordion. The vessel has glass windows at different parts ; and tools of various kinds can be protruded through caoutchouc sheaths which prevent entrance of water. There are two screws, one vertical, the other horizontal, driven by compressed air or by the hand ; the latter being used in case of a slight vertical or longitudinal inclination. There is, in addition, pneumatic apparatus for expulsion of vitiated, and supply of fresh air. This machine has made a very favorable impression on engineers and others competent to form an opinion of its merits.

PRACTICAL RECIPES.

DEAD SURFACE VARNISH. — Varnishes that

October 11, 1873]

MEDICAL

Towards the middle of July we began

"Martyrdom" epidemic

to hear of successive attacks of typhoid fever in the families of medical men in this district: first it was Dr. Murchison's children, then Mr. Spence Watson's, Dr. Tuller's, Mr. Maunder's, Dr. Buchanan's, Mr. John Wood's, and so on, till it seemed that the whole medical community were to be decimated by typhoid. Nor was there anything to explain the mysterious outbreak. Some of the houses had been not long before most carefully overhauled, and in most of them the sanitary conditions had been well regulated. The sewers were trapped and ventilated, the waste-pipe of the water-cisterns was not connected with the sewers, and all the water was filtered. Presently a clue was suggested. Dr. Murchison's children had been attacked in two sets, and under peculiar circumstances which led him to think, on consideration of certain details, that it was possible that the milk which they drank might be the source of infection. He communicated this suspicion to some of his neighbors, and in the course of an hour or two it was found that nine families in the neighborhood who were suffering from typhoid were all drinking this same milk, and this seemed to be the only condition in common.

See Wanklyn

The medical officers of health of the district immediately (August 4) communicated these facts to the company, and suggested that they should discontinue the supply of milk from the suspected source. Strong in their consciousness that their milk was pure and unadulterated, the company refused to see in the matter anything more than a coincidence, and declined to stop the milk. Day after day brought, however, fresh evidence. In a day or two thirty-two families were ascertained to be suffering from typhoid fever, of whom thirty were customers of the Dairy Reform Company. Presently a hundred affected families in all, including five hundred cases, were found to be using this milk.

Meantime a government inspector, Mr. J. N. Radcliffe, accompanied by other persons on behalf of the company and the parish, had inspected the farms from which the milk was supplied, had found typhoid fever to exist on one of them, and that the cess-pool was in dangerous proximity to the well in which at least the churns and milk-cans were dipped and washed and then not wiped but left to dry.

A great number of singular examples attested the fact that the milk was indeed the lethal agent. Thus, in the family of a noble lord in Grosvenor Square all the servants drank Dairy Reform milk, and the family milk direct from the estate: five of the servants were down with fever, and none of the family. In another case two servants in a house free from fever and in a distant part of London drank largely, one day when they were out, of the Dairy Reform milk: both were down with the fever, and none of the rest of the household. The family of the Dowager Duchess of Buckingham drank of the milk from the same can which supplied her next-door neighbor, a physician: the fever seized her household; the physician's household were exempt; he had all the milk which came into the house boiled. A number of similar instances strengthened the statis-

zini, and executed his work so well that the admirers of the arch-conspirator proposed to set up the corpse on the Capitol and save Italy the expense of a statue. The preparations are weather-proof, and will take on high degrees of polish. His mummified specimens, by a process known to him alone, can be restored to their original size and elasticity; while the petrified ones are as hard and possibly as durable as granite. The top slab of the table is composed of muscles, fat, sinews, and glandular substance, all petrified together in a block, the surface of which has been planed and polished until its face resembles marble. Certificates from Nélaton and other distinguished surgeons are attached to the specimen-limbs, setting forth that the limbs in question had, for the satisfaction of the certifiers, been restored to their pristine softness and pliancy by Dr. Marini.—*Lancet*.

DIGITALIS.—M. Gaunot, in the course of a paper published in the *Gazette Médicale de Paris*, on the action of digitalis, says, "When digitalis or digitalin is administered for some time to a man in full possession of sexual powers, these become gradually weakened, the propensities disappear, formation of the liquor seminis diminishes and may at last cease altogether. The anaphrodisiac properties of the drug are the secret of its good effect in spermatorrhœa."

Dr. Little recommends the use of digitalis in febrile cases in which stimulants are either not well borne or are contra-indicated, as where renal affection is present. He has given half-drachm doses of the tincture every three or four hours in typhus, enteric, and rheumatic fevers, with very favorable results.—*Edinburgh Medical Journal*, July, 1873.

OLEATE OF MERCURY IN TINEA CIRCINATA.—Dr. Leonard Cane, in the *London Lancet* for August 16, 1873, recommends the use of the oleate of mercury (ten per cent. strength) as being of particular service in tinea circinata, several applications being sufficient to destroy all trace of the affection. It produces no staining or injury to the skin, nor is the application attended with pain or other unpleasant effect. The preparation is said to penetrate into the sebaceous glands, hair-follicles, and even into the hairs themselves, the mercury being in a state of solution in an oily medium. The penetrating power of the oleate may be increased by adding a small quantity of ether (one part to eight) to it. Dr. Cane records several cases where he has employed the oleate as a parasiticide with satisfactory results.

L. A. D.

TREATMENT OF DIPHTHERIA.—Dr. Lolli strongly recommends the following measures, having found them extremely efficacious in a great variety of cases.

1. Avoid cauterizing, except when gangrene occurs.
2. Do not have recourse to bleeding, purging, or emetics, unless you are forced to do so by exceptional symptoms.
3. Diet, according to appetite; but at all events generous.
4. Do not interfere with the functions of the skin; or rather promote them by rest in bed, poultices, sinapisms, etc., and persevere until, from the general or local symptoms, it may be supposed that the morbid principle has been eliminated or destroyed.
5. Use the following mixture as a gargle, or apply with a camel's-hair pencil every second hour, or employ as an inhalation if the disease has reached the larynx:

R Lime-water, fʒiv to xij;
 Solution of perchloride of iron, fʒss to fʒij;
 Carbolic acid, gr. j to xx;
 Honey of roses, fʒj.

Shake the bottle well. The mixture may be largely diluted with water or tea and given internally.—*The Lancet*, Aug. 16, 1873.

Hygiene.

Epidemic of Typhoid Fever Propagated through the Milk-Supply.

A severe outbreak of typhoid fever, a counterpart of the Marylebone epidemic, has occurred at Jarrow. It has been discovered by Mr. JOHN SPEAR, medical officer of health, to have arisen from an infected dairy, his suspicions of this farm having arisen from the fact that fourteen of the infected families received their milk from that source. On visiting the farm, Mr. Spear found that six of the farmer's family, including himself, were laid up with typhoid. The water used in the dairy was derived from a well eighteen yards distant from a privy and cesspit, a hole in the ground unprotected by any brickwork. An analysis of the water revealed the fact that it was contaminated with sewage to a very great extent; the analysis showing:—

Total solids	106.3	grains per gallon
Chloride of sodium	12.6	“ “
Free and saline ammonia	.031	“ “
Organic ammonia	.053	“ “

An analysis of the milk, while it showed a poor quality, did not prove any adulteration by water. The washing of the cans with water from a contaminated source is quite sufficient to render it infectious. The peculiar system also by which each customer has his own tin bottle containing his daily supply, each bottle having, in addition to the usual cork, a piece of rag wrapped round it for the purpose of making it fit tightly, the piece of rag being passed from hand to hand, must increase the danger of infection immensely. Besides the water-pollution of this particular place, the whole arrangements were of a most disgusting kind. There was direct communication between the dairy and the rooms in which some of the fever patients were lying, whilst the dairy itself did double duty as a washhouse, and clothes from the fever patients had actually been washed there. The girl who milked the cows, a daughter, was in constant attendance on her sick relatives. The first patient was the boy who delivered the milk, and his case rapidly gave rise to others. Of twenty-seven families who received their milk-supply from this one source, eleven suffered. The aggregate number of cases amounted to twenty-five. To the prompt and efficient action taken by Mr. Spear and his staff of sanitary inspectors is due the fact that the fever was stayed. The polluted milk-supply was at once cut off, and disinfectants were freely used. Mr. Spear also ascribes the rapidity with which in some instances the disease extended, to the unwholesomeness of the houses, and the abominable state of some of the privies and ashpits attached to them. One of the chief conclusions which Mr. Spear draws from this outbreak, is the necessity which exists for some radical alteration in the mode in which the milk trade is carried on, and in this we cordially agree with him. In some of the best London dairies, a rigid sanitary inspection of all the farms which supply them with milk, and an analysis of the well-water in which the utensils are cleansed, are insisted on; and had some such inspection been made in the case of this particular farmhouse, we may safely assume that this epidemic would have been prevented.—*British Med. Journal*, Sept. 18, 1875.

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HENRY C. LEA, Philadelphia.

MICROSCOPIC examination of the muscular tissue of a wild-boar lately shot in the forests of Saxony showed it to be full of trichinae. This is the first case in which this parasite has been found in the wild-boar, it having been the general belief that only domesticated swine were affected.

1875

DR. NICOLAS VON KONIGLY finds in the *train* of meteors the spectrum-lines of sodium, magnesium, carbon, strontium, and possibly lithium, while the nucleus invariably gives a continuous spectrum, in which the yellow, the green, or the red predominates, according to the color, blue being very rare, and violet never seen.

between their nearest branches.

most branch of the curly-willow, on the side of the tree next the weeper, is about ten feet long, and six feet thick, and is densely covered with leaves. The curious fact is, that while the rest of this entire tree has the perfect habit of *S. crispa*, this large branch has the perfect habit of *S. Babylonica*. The long pendent branchlets, and every leaf, are in all respects those of the weeping-

1. He found that all the cases which came under his observation were produced by eating uncooked or imperfectly-cooked pork. 2. He reiterates the uniform teaching of medical observers that the vitality of the trichinae can be destroyed only by thorough cooking of the meat, and that the eating of merely smoked or dried pork is dangerous. 3. From microscopic examinations of pork killed in Southeastern Indi

Dr.

Sutton

of
Lithuan.

1875

over

Variation in Strength of a Muscle. Pp 6. Also, New Form of Lantern Galvanometer. Pp. 3. By F. E. Nipher. Reprint from *American Journal of Science*.

Specimens of Milk from Vicinity of Boston. By S. P. Sharples, S. B. Pp. 7.

Valedictory Address to the Medico-Legal Society of New York. By C. Bell. Pp.

ana, he found from three to sixteen per cent. of the hogs affected with trichinæ, the number of hogs diseased varying greatly in different localities. 4. That ninety per cent. of the disease produced by trichinous pork appears as gastro-enteritis, diarrhœa, or dysentery, ten per cent. only representing the cases of trichinosis proper.

Dr. Dickins on
Coppian Lectures 1876.
Chronic Kidney Disease

! ?

The vicious views expressed in the works on food in vogue some years ago, where the value of a food was strictly determined according to the amount of nitrogen present, have led to wide-spread impressions of an erroneous and mischievous character among the people at large. If they feel themselves not so well, they fly to animal food and brown meats, thinking that in them they will find the nutritive material which will restore them to health and strength. It, of course, does not suggest itself to them that this very nitrogenized matter they consume so readily must be got rid of. And the essence, the integral part of their ailment, is their inability to eliminate successfully the effete nitrogenous matters. Instead of sweeping the flue, they pile on more fuel. No wonder, then, at the amount of chronic renal disease now seen, not in private practice only, but also amidst hospital out-patients. It is readily obvious that, in conditions of this kind, the first point to be attended to is the reduction of the albuminous elements of food to the amount absolutely required for the daily renewal of the tissues of the body. This amount has not been settled by physiologists, but it may be stated approximately that it does not consist of more than a few grains of nitrogen daily, —such amount, indeed, as is furnished by the rice diet of the Hindoo. Most people, and

reached, and during this time much may be done to retard the advance of the morbid changes. In considering what these means and measures are, it may be well to quote what Dr. Dickinson says as to the tardy progress of renal cirrhosis:

"Passing now to the more chronic disorder, that which is recognized as the granular kidney, and occasioned by creeping fibrosis, we have to describe a condition which begins with and belongs essentially to the connective and vascular structures, which are external to the proper secreting elements. The change begins in disproportional growth, somewhat of a rank luxuriance, in the fibroid tissue, with which the arterial channels are uniformly fringed. Hypertrophy of this part leads to atrophy of all the rest. Creeping along the arterial lines with slow and hesitating steps, involving the organ not all at once, but by little and little, the disease makes itself felt, not suddenly, but with so gradual a departure from health that its date is usually indeterminable, and its existence unsuspected until it has reached an advanced stage. And in other respects, too, in its progress and symptoms, it affords a precise converse to the more acute disorder. One selects the young, the other the old. One is certainly local to the gland; it is in dispute how far the other is general to the system."

Such expression of opinion, from so competent an authority, is itself very important;

Curiosities of Diet

Food of the Bongos.—The Bongos, a negro tribe on the Upper Nile, are represented by Schweinfurth as being very indiscriminate feeders. Among them rats and field-mice are esteemed delicacies. The pursuit of these animals is a favorite occupation of the children, who tie them together by the tails in dozens, and carry on a lively barter in them among themselves. But a still greater delicacy is cat-flesh. The children place, in the narrow paths through the tall grass of that region, traps of bamboo, with living field-mice for bait. In these they catch cats. The Bongos, indeed, eat meat of all kinds, except human flesh and the flesh of dogs. They make no objection to meat that is in an advanced state of decomposition; it is then more tender, and, besides, is more nourishing, more strengthening than fresh meat. "Whenever I had cattle slaughtered," says Schweinfurth, "I saw my bearers eagerly contending for the half-digested contents of the stomach, after the manner of Esquimaux, whose only supply of vegetable food seems to come from the contents of the reindeer's paunch. They would even strip off the amphistomous worms which literally live in the stomachs of all cattle in this region, and, without more ado, put them raw into their mouths by the handful. After this, it could no longer surprise me to find that the Bongo reckons as game every thing that creeps or crawls, from rats and mice to snakes, from the carrion vulture to the mangy hyena, from the great fat earth-scorpion to the caterpillar, or the winged termite with its oily, mealworm-like body."

NOTES.

MONSIEUR N. RAUIS, connected with the secrétariat of the Brussels Royal Academy of the Sciences, proposes to publish a "Universal Dictionary of Academies, Learned Societies, Observatories, Universities, Museums, Libraries, Botanic Gardens," etc.—a systematic catalogue of all institutions concerned with the progress of science, letters, and the arts. He requests of the officials of such institutions everywhere to send him information about their establishments under the following heads: 1. Title; 2. Date of foundation; 3. Aims; 4. List of officials (titles only); 5. Location, with the exact address; 6. Prizes, etc., offered; 7. Property owned—such as library, archives, mu-

*Prof. A. W. Warts,
found August 1875*

MISCE

veil which we are enabled to lift, a glimpse is revealed to us of the harmonious plan of the universe. As for primary causes, they remain beyond the ken of man's mind; they lie within another domain which man's intellect will ever strive to enter and search. So is man constituted, and such he will forever continue. In vain does science reveal to him the physical structure of the universe and the order of its phenomena: he will strive onward and upward in his innate instinctive conviction that things have not within themselves their sufficient cause, their foundation and origin; he is gradually led to subordinate them to a primary cause, a unique and universal God."

Reported Discovery of Living Moas.—

A report is published in an Auckland newspaper, of October 3d, of the finding of two live moas at Browning Pass, New Zealand. The story runs that one R. K. M. Smyth, on September 26th, while hunting, saw his dog set off suddenly at a great pace, barking furiously. He followed, and soon saw two large birds, one of gigantic height, the other smaller. Seeing the dog getting the worst of the fight, Smyth ran back and called his mate to assist him. They got a leather rope, and, under shelter of a small patch of bush, got behind the larger bird and roped it at the first cast. He then took a turn round a birch tree with the rope. The large bird did not show fight to any great extent, and the smaller one remained quietly by it. After this they had very little trouble to secure the legs of the large bird, and they left it fastened to the tree two days, the young one making no effort to leave its mother. With the assistance of some shepherds the old bird was taken to the camp, the young one following. The old bird is eight feet high, and the young one five feet. The story needs confirmation: it is almost too good to be true.

How Migration changes Man.—We are indebted to Rev. I. T. Beman for a copy of an address delivered by him on the "Moulding Influences of Migration upon the Human Family," particularly as exhibited in certain Yankee settlements in Southern New Jersey. The author points out the physical differences existing be-

AN OLD TIME DISH. People in Missouri are trying the experiment of cooking in various forms their unwelcome visitors, the grasshoppers. One editor, who is enthusiastic over the different dishes he has tested, says of the dessert of baked locusts and honey, that "the distinguished Scripture character John the Baptist, must have thrived on his rude diet in the wilderness of Judea."

will be some 1,800 feet more than the frontage of the Palace of Industry at Vienna. The Art Gallery, on the Lansdown plateau, 116 feet above the level of the Schuylkill, built of granite, glass, and iron, and declared thoroughly fire-proof, is 365 feet in length by 210 in width, and the centre hall and galleries will hold 8,000 persons. The Horticultural building, ornate and commodious, built chiefly of iron and glass, is 380 feet in length, with a width of 193 feet; and the proposed Agricultural building of wood and glass, is to have a nave of 820 feet by 125, with transepts at

IN some parts of Russia the young shoots of the "cat-tail" (*Typha latifolia*) are used as asparagus; they are said to be delicious. The plant grows abundantly in the United States in swampy localities.

hardest, rising at 4 A. M., and working, with hardly any intermission, till dark, having constantly to strip and plunge into the stream in all seasons. The quantity of food

obtained from this

A CEMENT, impermeable to air and steam, and especially well adapted to use for steam or gas pipes, is made of powdered graphite 6 parts, slaked lime 3 parts, sulphate of lime 8 parts, and boiled oil 7 parts, well kneaded. — The *London Medical Record* says that a society of rat eaters has been formed at Gembloux, in Belgium; the members meet once a week, and the proceedings are wound up by a grand banquet, in which preparations of that delicious animal hold a prominent position. — M. Lostal, a railway contractor, of Ferminy, has communicated to the Society of Mineral Industry at St. Etienne, the results of his observations in preserving wood: he piles the planks in a tank, and puts over all a layer of quicklime, which is gradually slaked with water; the wood is said to acquire remarkable consistency and hardness, and to be quite safe from decay. — “Coals to Newcastle” is no longer a joke, large quantities of coal being

his posthumous will, leaving a large sum of money for good to mankind, that is, founding a hospital for this purpose and settling the question beyond doubt.

THE MODEL SICK-ROOM.

THE following is an extract from Professor A. B. Crosby's excellent lecture on "Common Sense in the Sick-Room :"—

The room which is selected for a sick-room should be as far removed as possible from those ordinarily occupied by the family, in order that the patient may have the benefit of perfect quiet. It should be large, airy, well lighted, and, if possible, should have a sunny exposure.

The *wall* of the sick-room is a pretty important matter to the patient. If it is covered with one of those dreadfully variegated papers, which, alas ! are regarded as ornamental, it will be found, especially if the patient is suffering from any disease in which

COOKING BY COLD.—It is a curious fact that the action of intense cold on organic substances is similar to that of a high degree of heat, and that meat can be cooked by cold. Quite recently a Hungarian chemist, Dr. von Sawiczewsky, has preserved meat by subjecting it, in a perfectly fresh state, to a temperature of 33° below zero, F., and sealing it afterwards in tins. The results obtained have been highly satisfactory; the meat on being removed from the cans appears, in point of smell and color, as fresh as if just taken from the butcher's stall. A commission appointed by the German governments has lately conducted a series of careful and successful experiments upon the process; and, as a final test, two corvettes of the German navy, being about to circumnavigate the globe, have been supplied with a large stock. An extensive

tion of cold cream or other unguent to the part. Now let the same woman, from, it may be, the same cause, have a uterine catarrh. She cannot keep the irritating discharge constantly removed from the surface of the cervix uteri, nor can she practically apply any unguent; and the end of the cervix in that woman is soon in the same condition as the upper lip and nostril of the little ragged boy who runs about the street on a wintry day, having no handkerchief to use and no cold cream to apply: namely, the epithelium is removed, and a raw, excoriated surface comes to view.

Catarrh of the uterus has generally become chronic before the patient applies to the physician, and the papillæ at the abraded spot, as a result of long-continued irritation, fre-

1876

TÆNIA AND RAW MEAT.—For some years past, the frequency of tænia, especially in children, has been assuming such unusual proportions in France, that it has attracted the especial attention of medical men. There was a rapid increase in the frequency of tænia in Paris during the year 1870, an increase due to the unaccustomed alimentation enforced by the siege of Paris. The frequency of tænia has not increased in that part of the army residing in France, as it has in the civil population; while among those stationed in Asia and Africa, particularly in Syria, Algeria, and Senegal, tænia is of frequent occurrence. The cause of this increasing appearance of the parasite in the civil population is to be found in the widely extended use of raw meat as a medicament, and of insufficiently cooked meat as food. The uniform alimentary régime of the soldiers explains the persisting rarity of tænia in the army in France, while in Algeria, etc., in consequence of the want of public hygiene, the bodies and débris of animals are often left exposed to the air, and the water used as drink becomes charged with eggs

Tinct. digitalis..... ℥xxx.
Aquæ..... ʒi.

M. S. A teaspoonful every second hour.

Directed the nurse to save any urine which the patient might pass.

I was still of the opinion that the case was an hysterical paroxysm, but, reflecting that in several instances embolism had been mistaken for hysteria, and that, in genuine cases of pulmonary embolism, a temporary mitigation of the urgent symptoms had sometimes been noticed, and not having been able at that time to get a frank history of the patient's hysterical antecedents, I asked for a consultation, and it was arranged that my friend Dr. Weir should be asked to see the case with me in the evening.

Dr. Weir saw her with me at 9 P.M. She had taken two doses of the morphine and digitalis mixture, and was feeling decidedly more comfortable, being now able to lie at full length. The copious sweating was very much moderated. She was still rather thirsty, and had no desire for food, having taken none since her breakfast except a cup of beef-tea in the evening. Her pulse was 120, and the temperature in the axilla 100.3° F. The muscular twitching had subsided. She had felt inclined to sleep at times, but had resisted.

or débris containing 'cysticerci.' The prevalence of tænia in Abyssinia is due to the practice of eating the raw flesh of the sacrifices while it is still warm and palpitating. Formerly in St. Petersburg the Bothriocephalus alone was met with, but since the introduction of the use of raw meat in the treatment of the diarrhœa of children, cases of tænia in these children have been observed. Numerous isolated cases, moreover, have been reported, which show undoubtedly the dependence of tænia on the use of raw meat.

Tænia larvæ may also be ingested alive in underdone meat. M. Vallin has proved experimentally that the temperature of roast meat, as it is usually served, varies between 148° to 151° F., at the periphery, and 135° to 140° at the centre, and that the latter temperature is not sufficient to destroy the larvæ. He has proved that a temperature above 153° F. is necessary to destroy trichinæ.

Observation has also shown that it is the tænia mediocanellata which proceeds from the cysticercus of beef, while the armed T. solium is developed from the cysticercus of pork. The third variety of cestoid to which man is subject, the bothriocephalus latus, seems to be developed directly from the egg, and is propagated by the use of water vitiated by the excrement of men or animals.

The prophylaxis of tænia consists simply in subjecting beef and pork to a sufficiently high temperature in the process of cooking, or, as has been proposed by M. Roger, in the substitution of raw mutton for raw beef. The cœnurus, the only cestoid larva met with in sheep, is found exclusively in the brain, and accomplishes the second stage of its development in the intestine of the dog, but not of man. Finally, in each particular case, the advantages to be derived from the use of raw meat must be weighed against the inconsiderable dangers dependent on the development of tænia.—*Gazette Médicale de Paris*, March 11.

to this class of fractures. Under the microscope he has examined the cartilages, and thinks that a great deal may be learned in that way as to the predisposing causes of these fractures. He draws the following conclusions from his study of the subject. 1. That fractures of the costal cartilages may be arranged in three groups, the first containing recent fractures, which are consequences of grave injuries of the chest, and mere results of the fractures of the sternum or ribs; the second, united fractures caused by limited direct violence; the third, fractures the result of muscular action. 2. That degeneration of the cartilages, which precedes their ossification—the cleavage of the hyaline substance—may be regarded not only as a cause predisposing to fracture, but also as a cause determining its direction, which in the great majority of cases is transverse. 3. That oblique fractures are possible chiefly as secondary injuries. 4. That the callus in these fractures is developed as in bone, the broken cartilage participating in its development. 5. That the difference between the modes of union in bone and cartilage fractures consists, in the case of overlapping fractures, in the more limited development of callus in the cartilage fractures, and in all forms of fracture in the slowness with which the process of union would appear to be completed.—*The Dublin Journal of Science*, March, 1876.

RESECTION OF SHAFT OF TIBIA, LEAVING PERIOSTEUM. REPRODUCTION OF BONE.—Two operations of this description were performed by Prof. Spence at the Edinburgh Royal Infirmary. The first case was of a boy ten years old, who had acute necrosis of the shaft of the tibia. Prof. S. separated the periosteum all round the bone, with the periosteum scraper, and removed the entire shaft, after resection above and below. The wound was stuffed with lint soaked in carbolyzed oil. A posterior splint was applied and the limb slung. In two months new bone was the

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EXTRACT OF MEAT.

BY BARON LIEBIG,

President of the Royal Academy of Sciences at
Munich.

In a letter by Dr. Edward Smith, which appeared in the *London Times* of October 16th, he reproaches me with several quotations contained in my letter of October 1st, which require on my part some vindication.

Dr. Smith says that the passages I have quoted on "economy of nutrition," "the small morsel of meat," "fish," "tea," are not extracts from any published work of his, and he calls upon me to explain as to where I had obtained my (most unaccountable) "quotations." My vindication is not a difficult one, and I gladly take this opportunity to explain more fully the real value of extract of meat for the alimentation of the people; the only unpleasant part of the task is, that in doing so I am compelled to speak more of myself than I like.

In the first place it is quite correct that the above-mentioned quotations have neither appeared in the article in the *Standard* nor in that of the *Times* of August 20th. They are taken word for word from an article entitled "The Butcher's Bill," which appeared in the *Saturday Review* of August 31st. This article is avowedly based on Dr. Edward Smith's views, so that any one who took the trouble to read it must, like myself, have arrived at the conviction that its sentences contained the authentic opinions of Dr. Edward Smith.

Dr. Edward Smith says, "Let it be clearly understood that at length Baron Liebig is in accord with other scientific men, and that all may adopt the words of Liebig. 'Neither tea nor extract of meat are nutriment in the ordinary sense,' and all I contend for is accomplished." This does not seem to say less than that I have now been converted to views which either I formerly had not, or which I even disputed, while the real truth is that all that has been ascertained within the last thirty years on these subjects is in perfect accord with my teachings. Thirty years ago I taught, in my 'Animal Chemistry,' that for the preservation of life the food of men, as also that of animals, must contain one indispensable element for the formation of blood or of the albumen in the blood. I have further explained, in my 'Researches on the Chemistry of Food' (1847),

III.—22

that "beef-tea" or "extract of meat" contains none of the substances called albuminates, as these latter coagulate and separate when the meat is boiled in water. In my 'Familiar Letters on Chemistry,' xxix. p. 421 (edition of 1851), I said, "In the albumen of this fluid (juice of flesh) we have the substance serving as transition product to the fibrine of flesh, and in the other substances (contained in beef-tea) the matters required for the production of cellular tissue and nerves." From this it will be seen that I never asserted that "beef-tea" or "extract of meat" contained substances necessary for the formation of albumen in the blood or of muscular tissue. I have, on the contrary, designated them as "food for the nerves," in the same sense as common salt is also designated as food, although one cannot always define in which manner it acts usefully.

It cannot, therefore, be said that "I am at length in accord with other scientific men," but that these scientific men, including Dr. Edward Smith, have simply adopted what I have always, and from the very beginning, taught. Based on my own definitions, Dr. Edward Smith informs me that extract of meat is not "food," but a "nervous stimulant." But what is a nervous stimulant? everybody will ask who is not satisfied with a word, but wishes for a definition. We take the constituents of extract of meat in our daily food, just as we take tea and coffee in addition to our food, and nothing can be more undeniable than that these substances produce a certain beneficial effect on all the functions of the body and also on the process of nutrition. It is clearly not the duty of a scientific man to simply deny these effects, but to find out how great is the share these substances have in the functions of the animal organization.

Some years ago two physiologists at Vienna attempted to prove, by experiments on themselves, respecting the effect and value of common salt in the process of nutrition, that salt is a luxury and of no value for nutrition and the preservation of health. In matters affecting the alimentation of the people no importance can be attached to such trifling experiments if they are in contradiction to confirmed experiences, and this contradiction will grow in the same proportion the less the experimentalist is capable of observing and rightly interpreting facts.

In order to comprehend the difference between "common food" and "nervous food," as I will call it in order to avoid circumscription, it must be considered that man has two kinds of work to perform, muscular or mechanical work and brain or nervous work. The one, the muscular work, is under the dominion of the nerves and the brain.

By "common food" must be understood those substances which serve for the preservation of the temperature and restoration of the machine. Coffee, tea, and extract of meat are not suited to these purposes; by their effect, however, on the nerves they exercise a decided influence.

The experiments made with extract of meat in Russia, France, and Sweden are what in the scientific world are

termed "sham experiments." They are not undertaken to find out that which is not known, but, as the result is known beforehand, appear really only to be made with a view to deceive others, and the conclusions drawn from them are simply absurd. It will suffice to describe one of these experiments in order to convince any one who bears in mind that it has been scientifically determined that extract of meat does not contain any substances necessary for the formation of albumen in the blood, and for the restoration of the waste of muscular tissue.

Two dogs of almost equal weight were fed, the one with meat, the other with extract of meat. The former was fed with 400-500 grm. fresh meat, the other with 12½-15 grm. extract of meat (the quantity contained in 400-500 grm. fresh meat). The dog fed on meat flourished, his weight rather increased, while the other fed on extract of meat only, became thin, was attacked with diarrhoea, and would have died if the experiment had been continued. The inference drawn from this experiment is: Extract of meat is not nutritious, it rather has poisonous effects, causes diarrhoea, and would produce death. That the other dog had likewise consumed 12½-15 grm. extract of meat in the 400-500 grms. of meat without being seized with diarrhoea and feeling any injurious effect—this fact does not trouble the experimentalist; nor does it concern him that a dog weighing from 2 to 3 kilogrammes requires from 40 to 50 grm. of carbon in his food for the process of respiration and to keep up the weight of his body, while 12 to 15 grm. extract of meat only contain 3-4 grm. of carbon.

These experiments made by Dr. Beljowski, in Moscow, and the conclusions drawn from them, are identical with the French: *vide* 'Moniteur Scientifique, Quesneville,' 1-15 Dec. 1871. That no experiments have been made in England similar to those in Russia and France proves that English physiologists possess more common sense.

Concerning the standing of Professor Almen, in Sweden, it will suffice to mention here his assertion that "a glass of warm water with a little pepper must produce the same effect as a cup of beef-tea." What sensible physician would venture to prescribe warm water with pepper instead of meat broth to a patient recovering from typhoid fever? Nor is this done in spite of Professor Almen in the Swedish hospitals. Beef-tea is used there in the same cases and for the same purpose as with us.

That in Gottingen extract of meat is generally used in family households and also in that of Professor Mussner, I may venture to affirm.

In order to correctly understand the significance of meat diet and extract of meat, it is necessary to turn one's attention to the difference of the component parts of meat and those of vegetable foods. Meat contains in its albuminates the chief requirements for the renovation of the muscular tissues and for the preservation of lasting muscular action. Those constituents of the meat which are soluble in boiling water take no part in the formation and renovation of the muscular tissues.

But by their effect on the nerves they exercise a most decided influence on muscular work, wherein meat differs from all other animal and vegetable food.

By the use of meat we consequently obtain two effects, the one, effect on the nerves, perfecting and strengthening, the other, muscular action. The price of other articles of food, even of those containing a considerable amount of muscle-forming material, is much lower than that of meat, and is not in proportion to the contents of muscle-forming substance. According to calculations made in my own household, we obtain in 100 lb. of butchers' meat (67 lb. muscle, 12½ lb. bones, 8½ lb. fat, 3 lb. membrane) 13.9 lb. albuminates. In 100 lb. cheese there are from 26 lb. to 30 lb. albuminates, and likewise is the liver and brain richer in albuminates than the same weight of butchers' meat. The blood of animals is richer still in albuminates in proportion to its price. Nevertheless, nobody thinks of placing blood, liver, or cheese fully on a par with butchers' meat.

Vegetable albuminates are still lower in price, and from these is produced in the bodies of animals all the muscular food which man consumes. 100 parts of ordinary wheaten flour contain very nearly as much muscular food as 100 parts of fresh meat, but how small is the price of bread as compared to that of meat.

This clearly shows that the instinct of man discovered a difference in the effects of his various foods, and that he does not estimate and judge them in proportion to their contents of carbon and nitrogen, or of muscle-forming and heat-producing substances; but that he pays a higher price for meat because meat contains certain other substances which are totally wanting in other articles of food, and it is these very substances which form the component parts of beef-tea as well as of extract of meat.

These substances, as is well known, impart to meat its peculiar value for nutrition, and form the difference between vegetable and animal diet. The difference between the two, therefore, is not based on the dissimilar nature and facility of assimilation of the albuminates, contained in the animal and vegetable food, but in the fact that meat contains certain elements which are not to be found in cheese, in blood, and in vegetables.

I believe that the researches of Pettenkofer and Voit are calculated to throw some light on the effects of the component parts of extract of meat. In their experiment on the tissue waste of a man in normal condition while abstaining from food, the individual breathing in the apparatus of respiration was left in three instances without food with the exception of water, salt (15 grm.) and a little extract of meat (12½ grm., rather less than half an ounce), and with respect to the results obtained the two experimentalists say, "The state of health during the privation of food for thirty-six hours was a completely normal one, and according to the assurance of the fasting man, he could have borne it longer." This fact explains, I believe, the physiological importance of the soluble parts of meat or extract of meat; they do not serve for the renovation of the ma-

chine, but they maintain it by their effects on the nerves during temporary disturbances, even when deprived of food, in normal action, and it cannot be doubted that it is this effect which is paid for by the higher price of meat.

London navvies who were sent out during the Crimean war to construct the railway at Balaclava, and who, according to the report of Dr. Baudin, created by the extraordinary amount of work they performed the greatest astonishment among the English and French soldiers, consumed daily in their food from 150 to 159 grms. albuminates.

The agricultural laborer in Upper Bavaria consumes in his farinaceous food, according to the experience and calculations of Professor Dr. H. Ranke, 153 grms., therefore almost the same quantity of albuminates as the English navy, but how extremely different are the working capabilities of the English and Bavarian laborer in reference to the energy of work, *i. e.*, the amount of work accomplished within a given time? and this difference is attained by the English navy consuming more than one-half of the albuminates in the shape of meat, whilst the Bavarian eats meat only on six days of the year. A few slices of bread and butter with milk at breakfast give nutriment enough for a child; an adult, however, has very different work to perform, and he therefore increases the effect of his food by a cup of tea or coffee. It is stated in Frankfort-on-Maine as a well-known fact that old Mayer Anselm Rothschild, the founder of the eminent firm, never despatched any important business at night without having previously taken a cup of strong black coffee; and it may be supposed that the celebrated financier derived some advantage from the effect of the coffee on his decisions, for he was not the man to spend a farthing for anything which would not have given him a return.

When the meat by boiling has been freed from its soluble parts, the remainder, or more correctly the albuminates in such residue, have no greater nutritive value than the gluten of wheat flour, which remains after the manufacturing of starch. Both the meat albuminates and the gluten are chemically and in their physiological effect identical things.

If, to meat exhausted in this way, the extracted parts are readied in the shape of beef-tea or extract of meat, it is eagerly eaten by dogs who despise it without such addition; in fact, all component parts of meat are thereby reunited which are contained in roast meat.

Now, as vegetable albuminates are identical with albuminates contained in the flesh of animals, it will be easily perceived that if we add to our vegetable food, being rich in vegetable albuminates, for instance to bread, peas, beans, or even potatoes and rice, the soluble parts of meat such as are combined in extract of meat, we thereby impart the peculiar nutritive value to it which distinguishes meat in our estimation from other food.

Dr. Gerhard Rohlfs, well known by his travels in

Morocco, says, in reference to the effect of extract of meat, in a letter addressed to me: "As regards extract of meat, it has proved, particularly to us travellers in Africa, one of the greatest blessings. On my travels through the great desert from Tripolis to the Tschad Lake, it was my daily food. Being without any meat I took it in the morning spread upon biscuits, and this was not only very palatable but it proved a complete substitute for meat diet. In the evening I made beef-tea, adding a good portion to rice, lentils, or kuskuss, or whatever I happened to possess in the shape of vegetables. I have become so accustomed to the extract of meat that I am still obliged to keep it constantly in my house."

It will be well understood, therefore, that by the addition of extract of meat to our food, we neither economize carbon for the maintenance of the temperature nor nitrogen for the sustenance of the organs of our body, and that it therefore cannot be called "food in the ordinary sense," but we thereby increase its working capabilities and its capacity to resist exterior injurious disturbances, *i. e.*, to maintain health under unfavorable circumstances. Thus an addition of extract of meat to vegetable food forms the only means to make up for a want of meat.

All this taken together gives to these substances, to which also belong tea and coffee, a very high value in the alimentation of our populations, the last and true object of which is the production of working power for mental and bodily work; and it becomes perfectly intelligible why the great historian Macaulay devoted very properly in his celebrated work, an entire chapter to the introduction of coffee into England as being to some extent connected with modern life.

For our object it is tolerably indifferent with what name is designated the effect of the so-called "Nervous stimulants."

A few years since agriculturists still considered gypsum, lime, and bone meal to be stimulants for the growth of plants; now we know perfectly well that they are nutritive substances for plants. In modern life men on the whole perform more muscular and brain work than formerly, and the average duration of life of individuals has not decreased but increased, and nobody who takes a comprehensive survey of life can doubt that coffee and tea contribute largely to this end, and that extract of meat properly used is a really good and a most useful thing.

In conclusion, it may be mentioned that I have given my ideas on this subject in two treatises, both of which appeared in English scientific journals; the one "On the Nutritive Value of Different Sorts of Food," in the *Lancet* (January, February, and March, 1869), the other in the *London Pharmaceutical Journal* ("The Source of Muscular Power"—September and October, 1870), and I think that no English physician wishing to criticize my opinions should be allowed to ignore these two treatises of mine.

One word more about Dr. Edward Smith. It is a

pity that he thinks himself competent to give his opinion on questions of which he cannot be said to have a perfect knowledge. This becomes evident as soon as he touches on chemical subjects. For instance, in a letter to the *Standard* (October 24, 1872), Dr. Edward Smith declares that beef-tea made of fresh soup meat would certainly contain albumen, etc., and he charges me with hardihood for comparing extract of meat with such beef-tea. Dr. E. Smith apparently forgets that the soluble albumen of meat is coagulated by boiling it with water, exactly in the same way as the albumen of eggs, and that, therefore, beef-tea cannot contain albumen any more than extract of meat. Both extract of meat and beef-tea are prepared from the same material exactly in the same manner, and the difference of the former from beef-tea consists simply in extract of meat being beef-tea condensed to the consistency of honey.

ESTIMATION OF TANNIN.

BY J. M. MERRICK, B. SC.

It is unfortunate that we possess no ready and easy method for the estimation of tannic acid—a method, for example, as easily applied and as trustworthy as our processes for determining the value of bleaching powder, or of a manganese ore. Samples of bark extract and tanning materials are frequently brought to chemists to have their percentages of tannin determined, and it is seldom that the results obtained by the ordinary methods are satisfactory to the analysts themselves.

Having had, this summer, frequent occasion to make tannin determinations, and having had some of my results called in question—always as too low compared with those of other analysts—I have been reviewing some of the common methods with a view, first, to determine their absolute accuracy with pure tannin, and second, their accuracy, or agreement among themselves with bark extract, etc.

The tannic acid used in the following experiments was the commercial article—such as is sold in one ounce bottles—dried at 100° C. and kept for a few days over oil of vitriol.

1. Determination of tannin by precipitation and measuring the bulk of the precipitate.

For a precipitating solution I took 20 grms. tin crystals, dissolved them in water, added an excess of caustic ammonia and then a little hydrochloric acid to nearly clear the solution, which was then filtered and made up to one litre.

Three solutions of tannin were made, containing 5 grms. tannin in 120 c.c. H₂O, and 10 c.c. tin solution added to each, the precipitate being allowed to settle after the stoppered jar containing the liquid and precipitate had been violently agitated a few minutes. The volumes of the precipitates were read off after the lapse of 22 hours:—

	Grms. Tannin.	Hours.	c. c. H ₂ O	c. c. Tin Sol.	c. c. Ppt.
(1)	.5	22	120	10	39.75
(2)	.5	22	120	10	40.00
(3)	.5	22	120	10	41.50

The supernatant liquid was tested and found to still show a slight amount of tannin; 10 c.c. of the tin solution were therefore added; the volume made up to 200 c.c. with water, and the bulk of the precipitate read off after the lapse of 17 hours.

The results were as follows, viz:—

	Grms. Tannin.	Hours.	c. c. H ₂ O.	c. c. Tin Sol.	c. c. Ppt.
(1)	.5	17	200	20	60
(2)	.5	17	200	20	61
(3)	.5	17	200	20	56

Solutions were then made containing .25 gm. tannin in 90 c.c. H₂O, and precipitated with 10 c.c. tin solution.

The bulk of the precipitate was taken at the end of 3, 20, and 48 hours.

	Grms. Tannin.	c. c. H ₂ O.	c. c. Tin Sol.	Bulk Precipitate in c.c.		
				3 hrs.	20 hrs.	48 hrs.
(4)	.25	90	10	90	42	28.75
(5)	.25	90	10	60	36.50	29.75

A solution was made by dissolving one gm. tannin (dried for three days over oil of vitriol) in 1000 c.c. water, and three portions, viz., 75 c.c., 50 c.c., and 25 c.c. were put into graduated jars and made up to 105 c.c. with water, and 10 c.c. of the tin solution added to each.

The bulk of the precipitate was read at the end of 24 hours.

	Grms. Tannin.	c. c. H ₂ O.	c. c. Tin.	Hours.	Bulk ppt. in c.c.
(6)	.075	105	10	24	11.5
(7)	.050	105	10	24	9.00
(8)	.025	105	10	24	5.00

The following experiments were then made for the sake of determining the comparative value of a lead salt as a precipitant. One gramme of the same tannin was dissolved in 250 c.c. water, and divided into three portions of 120 c.c., 80 c.c., and 50 c.c., which were precipitated in graduated jars, with respectively 12 c.c., 8 c.c., and 4 c.c. of a solution of subacetate of lead that had been prepared for decolorizing sugars. The precipitate seemed more dense than the tin precipitate and settled quicker. The results were as follows, viz:—

	Grms. Tannin.	c. c. H ₂ O.	c. c. Lead Sol.	Hours.	Bulk precipitate in c.c.
(9)	.48	120	12	19	53.50
(10)	.32	80	8	19	35.00
(11)	.20	50	4	19	27.00

These three solutions were then made up to an uniform bulk of 200 c.c., violently agitated, and allowed to settle.

The precipitates settled very promptly, and at the end of four hours were read off, and again at the end of six hours.

	Grms. Tannin.	c. c. H ₂ O.	c. c. Lead Sol.	Bulk ppt. in c.c.	
				4 hrs.	6 hrs.
(9)	.48	200	12	92	91
(10)	.32	200	8	48	41
(11)	.20	200	4	36	32

In each of the first series taking the lowest result as 100 per cent., we have the following, viz:—

Frank Coffey - first leave
space of 2 pages

Flesh-meal

Flesh-meal

of about 4 feet 6 inches, while that of the oats grew to about 3 feet 6 inches. These experiments have been several times repeated, with the same success.

ANIMAL FARINA—NEW FOOD FOR BEASTS.—The journal of the Central Society of Agriculture in Bavaria gives a curious report upon the utilization by agriculture of the residuum obtained in the preparation of the extracts of meats by the process of Dr. Liebig. At Fray Bentos, Uruguay, about 700,000 pounds of this product, the greater part of which is consumed in Europe, is prepared annually. It is obtained by throwing finely minced meat into water at the temperature of 61°, and evaporating the broth until it has acquired a sirupy consistency, always taking the precaution to carefully remove the fat upon the surface. About 200 pounds of fresh meat will prepare 6 pounds of the extract that is brought to the market.

The meat thus boiled, and which constitutes the residuum of the operation, has until of late been only imperfectly utilized, and has been destroyed by incineration, or by being thrown into the river. Lately, however, it has been used in the preparation of a fertilizer. Recently Liebig suggested the idea of utilizing this matter, which is so rich in nutritive properties, as food for domestic animals; and it is interesting to inquire if this end can be accomplished, as at Fray Bentos nearly 500,000 pounds of this dried residuum are annually produced. In order to appropriate the waste to this use, it is dried and reduced to powder. Samples of this new product having been sent to Munich, experiments were made with it upon swine, as it appears, with very advantageous results. In the agricultural review of the Journal des Debats M. G. Fonquet gives the following very clear and interesting information:

The pulverized material when completely dried is of a grayish color, and presents in its composition a ratio of 73.52 per cent. of albuminous matter, and 12.70 per cent. of fatty material.

A comparison of the composition of this animal farina and the fodders most frequently used shows that the former is much richer in nitrogen and fatty matter. In fact it contains three times as much of albuminous matter as vegetable fodder, and two and a half times as much as oil-cake, including also the same quantity of fat. No food can be complete if to the fatty and nitrogenous materials there is not united a certain quantity of salt, of the phosphates of lime and potassa, chlorides that exist in all the tissues and fluids of the animal organism, and for this reason the meat-flour does not possess the desirable qualities, as the process to which it has been submitted robs the muscular flesh of the salt that abounds in the extract given to the market.

The analyses of M. Lehmann, president of the Agricultural Society at Munich, have demonstrated that the meat of dried beef contains ten times as much of the phosphate of potassa and the chloride of sodium as that which has been treated by the process of Liebig. Vain attempts have been made to nourish dogs with the animal flour. After a short time the dogs would refuse this food, and if they were persistently and exclusively fed with it they died. But if the precaution was taken to add to it the salt of which it had been deprived, the results were very different. The dogs would then consume their rations with avidity, and rapidly increase in weight.

M. Lehmann selected the pig as the subject of his experiments, as it is well known that this animal can be sustained on either vegetable or animal matter. In his experiments potatoes were added to the pulverized residuum of the extract of meat. Two series of attempts were made. In the first, in order to replace the salt contained in the fresh meat, Lehmann made a substitute of the chloride of potassium and the phosphate of soda. In the second trial, considering the potatoes as sufficiently rich in alkaline salts, he only added the phosphate and carbonate of lime.

The experiments were made upon five gelded pigs of the Yorkshire breed, two of which were born on the 15th, and the other three on the 20th of August. In order to satisfy himself that the young animals were endowed with the same aptitude for assimilation, the experimenter submitted them to a preliminary trial, which demonstrated that they utilized all food with the desirable uniformity. This trial was followed by the experiment which was to ascertain the nutritive worth of the meat-flour, and which begun on the 18th of November, and continued until the 31st of December. The animals were separated into three divisions. The first two divisions, each comprising

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Flesh-meal

two subjects, were fed with the meat, and the third was nourished exclusively upon potatoes. As we have said, the meat-flour was accompanied by potatoes, and the mixture, to which was added 16 grains of common salt, was always reduced to a kind of broth by means of tepid water. The nourishment of the first lot was completed by 10.7 grams of the phosphate of soda, and 4.4 grams of chloride of potassium. To that of the second lot was added an equal mixture of phosphate and carbonate of lime. The mixture of meat and potatoes was consumed with avidity, and from the third day the animals of the first lot evinced so great an appetite that their ration was increased by the addition of potatoes.

During the forty-four days of the experiment, the animals of the first lot each consumed 219 kilograms (about 500 pounds) of potatoes, and 10.37 kilograms (25 pounds) of animal farina. Those of the second lot ate 208.75 kilograms (485 pounds) of potatoes, and 10.37 kilograms (25 pounds) of meat; while the hog of the third lot consumed 207.75 kilograms (484 pounds) of potatoes. At the close of the experiment the animals weighed as follows:

	First lot.	Second lot.	Third lot.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
November 18.....	58 63	58 58	58
December 31.....	124 124	119 119	86
Increase.....	66 61	61 61	28

As will be seen, a small addition of meat farina to the potatoes was sufficient to double the weight of the animals during the period of the experiment. The result shows that 100 pounds of potatoes alone gave an increase of 14 pounds in weight, while the same quantity of potatoes mixed with a small ration of meat-flour, (11 pounds,) in the same duration of time provided an increase of 29 pounds in weight.

ALCOHOL IN BREAD.—Mr. Thomas Bolas, in a communication to the Chemical News of May 30, states that the idea that the alcohol formed in the panary fermentation of bread is completely removed by the process of baking, is a mistaken one. By experiment he has established the fact that when about two ounces of ordinary bread is mixed with water and distilled, and the distillate is afterward purified, a perceptible quantity of alcohol may be obtained. Quantitative examinations of six samples of new bread, purchased at different shops in London, show the following results:

	Per cent.
I.....	0.245
II.....	0.221
III.....	0.401
IV.....	0.368
V.....	0.249
VI.....	0.339
Average.....	0.314

BOTANICAL NOTES.

BY DR. GEORGE VASEY, BOTANIST.

SUPPOSED AMERICAN ORIGIN OF RUBUS IDÆUS, (THE GARDEN RASPBERRY.)—Our cultivated raspberry is an importation from Europe. Our native red raspberry, (*R. strigosus*), however, is so near it that the specific distinctness has been in doubt; and specimens from British America and the Rocky Mountains certainly occur which a botanist

drop, to separate the excess of lead as sulphate, filter and evaporate the fluid to small bulk at a low temperature, mix with an equal volume of alcohol, filter, and treat the filtrate with 15 to 20 grammes of ammonia sp. gr. .960, mixed with an equal volume of alcohol. The alcoholic solution of ammonia is divided into two portions, which are added half an hour apart, after which the fluid is allowed to stand twenty-four hours. The morphine, which separates in distinct crystals, is collected on a weighted filter, washed with dilute alcohol and freed from a small quantity of narcotine which may be present by washing with ether. The remaining crystals of morphine are carefully dried and weighed.

FLESH-MEAL.—In our monthly report for July, under the head "Animal farina," we published a description of the process of manufacture of extract of beef at Fray-Bentos, Uruguay, as well as of the refuse consequent upon it, together with experiments upon the use of the latter as feed for cattle. In an article published in a late number of "Die Landwirthschaftlichen Versuchs-stationen," (Bd. XVI, No. 2 u 3,) Dr Pott calls this residue *flesh-meal*, which seems more appropriate than that given in the previous article. He also furnishes results of complete analyses of the product, which are as follows:

100 parts dry flesh-meal contain—

	Per cent.
Water	10.48
Dry substance.....	89.52
	100.00

100 parts flesh-meal dried at 100° to 110° C. contain—

Ash, (1) 5.46 per cent.; (2) 5.723 per cent.; (3) 5.58 per cent.
 Fat, 13.88 per cent.
 Nitrogen, (1) 13.27.

100 parts air-dried flesh-meal contain—

	Per cent.
Ash.....	4.88
Fat.....	12.42
Nitrogen.....	12.01

Collection of above data shows the composition of air-dried flesh-meal to be—

	Per cent.
Water.....	10.48
Ash.....	4.88
Protein substance*	72.06
Fat.....	12.42
	99.84

A determination of the soluble and insoluble mineral constituents gave the following results:

100 parts of substance dried at 100° to 110° C. contain—

Constituents <u>soluble</u> in water 6.18 per cent. containing	{ 0.64 soluble mineral salts. 5.54 organic constituents. 6.18
--	---

Insoluble residue, 93.82 per cent. containing {	4.22 per cent. mineral salts. 89.60 pr cent. organic constituents. 93.82
---	--

* Found by multiplying amount of nitrogen by 6.

Analysis of the ash.

	In 100 parts crude ash.	Calculated for pure ash.	Calculated for 100 parts dry flesh-meal.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Potash	1.990	5.499	0.11
Soda	1.326	3.664	0.07
Lime	8.785	24.049	0.48
Magnesia	1.160	3.205	0.06
Peroxide of iron	5.801	16.015	0.32
Phosphoric acid	15.333	42.376	0.85
Sulphuric acid	0.818	2.426	0.05
Silica	0.663	1.835	0.04
Chlorine	0.307	0.931	0.02
		100.000	2.00
Sand	53.328		
	92.511		
Carbonic acid*	7.489		
	100.000		

For comparison of results, analyses of ash, of flesh-meal, and that of fresh beef are given. All these analyses are calculated for pure ash. The analyses of fresh beef were made, one by Staffel and the other by Stölzel:

	Beef. Staffel.	Beef. Stölzel.	Flesh-meal. Pott.
Crude ash		8.30	5.46
Pure ash		7.60	2.00
Potassa	46.09	48.91	5.499
Soda			3.664
Lime	1.88	0.91	24.049
Magnesia	3.60	2.30	3.205
Peroxide of iron	1.07	0.82	16.015
Phosphoric acid	37.35	36.08	42.376
Sulphuric acid	3.66	3.84	2.426
Silica	2.25	2.47	1.835
Chlorine	5.28	6.04	0.931

DISEASE OF BEECH TREES.—A curious phenomenon has appeared in the beech forests of Westphalia, in the shape of a white coating, principally on the south side of the trees, caused by an exudation of a kind of wax from incisions made in the bark of the trees by a small insect which has been examined and described by Dr. H. Landois, professor of zoology in Münster, as being six-legged, 0.14 millimetre in length, and 0.086 millimetre in breadth. The color of the insect is lemon-yellow.† The wax was examined and analyzed by Dr. I. König, who described it as follows:

Under the microscope it appears fine threads; it dissolves in ether and melts at 78°–80° C. This latter property leaves no doubt that the white coating is nothing

* By difference.

† The name of the insect is *Chermes fagi*.

as morphia and atropia. It prevents mouldiness of the solution better than any other distilled water, and it does not irritate the tissues any more than common distilled water.—*La Tribune Médicale*, 14 Sept. 1873, from *Rep. de Pharm.*

Liebig's Extract.—In a letter to Joseph Bennert, Dr. PETTENKOFER enters into an elaborate exposition, or rather vindication, of Liebig's extract. Like all alimentary novelties, that renowned preparation has had to fight its way into popular acceptance through at least two initial prejudices: first, a suspicion as to its wholesomeness, to use no stronger phrase; next, a scepticism as to its possessing any specific virtue whatever. Both these barriers the extractum carnis has at length surmounted, though three-and-twenty years have elapsed since its discoverer first produced it in the Royal Laboratory at Munich. How little its assailants understood the object of their attack may be inferred from the charges they brought against it. "The extract," said they, "containing as it does neither albuminoids, nor fat, nor hydrates of carbon, is not an alimentary substance." Of course it is not. It was precisely on the principle of eliminating from the extract every particle of albumen, of fat, even of gelatine, that Liebig proceeded. And with what result? To produce, not an alimentary substance strictly so called, but a condiment which has a distinct and unique place in dietetics. The rôle of condiments in the complex action of nutrition is but partially appreciated, and the most natural condiments are usually neglected for others much coarser, more stimulating, but really less efficacious. Voit, the most recent experimenter in dietetics, confirmed the popular impression that the flow of gastric juice to the walls of the stomach may be accelerated even by the sight of meat, as when he witnessed in a fasting dog, in which he had established a stomachic fistula, the immediate rise of the juice when he offered, without giving, the animal a bit of meat. Bouillon, he further maintained—warm and well-boiled bouillon—is the simplest and best digestive, and it is from this premise that Pettenkofer

vindicates for the extract its paramount claims as a condiment. These it owes to the mixture of salts, different, indeed, but combined in definite proportions, in a ratio which the organism imperatively demands, and the slightest deviation from which would constitute a veritable impurity. No amount of the best meat can take the rôle of the extract any more than milk can play the part of cheese or butter. The product of Liebig is neither a nutrient nor an alimentary substance capable of economizing the albumen, the fat, or the carbo-hydrates; it is simply a condiment, but one of such efficacy that Pettenkofer does not hesitate to anticipate for it the chief place among such aids to digestion, not only in the sick-room, but in common everyday life. It has served him as a text for a very instructive essay on nutrition in general, and though much that he says is recapitulation, it is recapitulation of a kind that has a novelty of its own from the clear and discriminating eye he passes along the series of discoveries bearing on the physiology and application of food.—*Lancet*, Sept. 30th, 1873.

Treatment and Utilization of Sewage.—

The following are the conclusions of the Committee of the British Association for the Advancement of Science in regard to this most important sanitary subject:—

"I. All conservancy plans, including midden, heap, and cesspool systems, dry ash, and dry earth closets, pail closets, etc., are quite incompetent as solutions of the general question of the removal of the refuse matters of a population; they only deal with a small part of the liquid manure; towns which resort to one of them require to be sewerred, and the sewage requires to be purified. The manure produced is in all cases (except in that of simple pails or tubs, where no extraneous materials are added) poor, and will only bear the cost of carriage to a short distance, taking into consideration the cost of collection, that produced by the dry earth system being, even after the earth has been used three times over, merely a good garden mould. Moreover, these plans all violate one of the most important of sanitary laws, which is that all

refuse matters which are liable to become injurious to health should be removed instantly, and then to be dealt with afterwards. With all these plans it is an obvious advantage on the score of economy to keep the refuse about the premises as long as possible, and the use of deodorants of various sorts, or even of disinfectants, proves that this is the case, and that these systems all depend upon a fallacious principle. They should therefore be discouraged as much as possible, and only resorted to as temporary expedients, or with small populations, in very exceptional instances.

"II. The water-carriage system, on the other hand, is based upon a sound principle—that of removing all the refuse matters at once and in the cheapest possible manner by gravitation—and ought to be resorted to in all but the most exceptional cases. The opinion of the committee that all sewers should be made of impervious materials, and that separate drains to dry the subsoil should be constructed where necessary, has already been most emphatically expressed. The freest possible ventilation of sewers, house drains, and soil pipes, in order to prevent accumulations of foul air, is also essential. With regard to the utilization of the sewage, the Committee has come to the conclusion that the precipitation processes that it has examined are all incompetent, and necessarily so, to effect more than a separation of a small part of the valuable ingredients of sewage, and that only a partial purification is effected by them. Some of them may, however, be useful as methods of effecting a more rapid and complete separation of the sewage sludge.

"The upward filtration process only effects a clarification of the sewage, and is therefore no solution of the question.

"By properly conducted sewage irrigation a solution is afforded to the question of sewage utilization. It has already been stated that a precipitation process, or some clarifying process, may be found useful. In all instances it is essential that the land should be well underdrained, and that the sewage should all pass through the soil and not merely over it;

otherwise, it has been shown, it will only occasionally be satisfactorily purified. The catch-water, or, as the Committee has termed it, the "supersaturation" principle, is not defensible either on agricultural, chemical, or sanitary principles; an irrigation farm should therefore carry out intermittent downward filtration on a large scale, so that the sewage may be always thoroughly purified, while, at the same time, the maximum of utilization is obtained.

"It is certain that all kinds of crops may be grown with sewage, so that the farmer can grow such as he can best sell. Nevertheless, the staple crops must be cattle food, with occasional crops of corn; and it is also certain from the analysis of the soil that it has become very much richer, and that the manurial constituents of the sewage accumulate in it. Cattle should be fed on the farm, which leads to a vast increase in the production of meat and milk—the great desiderata of the population producing the sewage. Thus the system of farming must be specialized and capital concentrated, the absence of which conditions has proved a great barrier to the satisfactory practical solution of the sewage question.

"In reference to the influence of sewage farms upon the public health, the following important information is given: The Committee has not been able to trace any ill effects to the health of the persons living around sewage farms, even when badly conducted; nor is there any proof whatever that vegetables grown thereon are in any way inferior to those grown with other manure. On the contrary, there is plenty of evidence that such vegetables are perfectly suited for the food of man and beast, and that the milk given by cows fed on sewage grass is perfectly wholesome. Thus Mr. Dyke, Medical Officer of Health for Merthyr Tydfil, states that since the abundant supply of milk from the cows fed on irrigated grass the children's mortality has decreased from 48, 50, and 52 per cent. of the total deaths to only 39 per cent., and that so far from diarrhoea having been made more prevalent by the use of sewage cabbages, 'last year the Registrar-

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Also, no enteric disease produced

Prof. A. B. Crosby,
1 Bellevue Hosp. Med. Coll.,
N. Y.
in Med. Record, 1875

haps a little sugar, it gives the patient a trifle of nourishment in a very palatable form.

There is another article which has long been known in the sick-room, and that is beef-tea. This is not only agreeable to the taste when properly made, but it is one of the very best methods of administering nourishment. There are many who say that there is little or no nourishment in beef-tea, but it does nourish men, otherwise they could not live as long as they do upon it. I admit that bad beef-tea is not very nutritious; and it is perhaps the exception that patients get good beef-tea. It is this fact, perhaps, which, as much as anything, has led to its disuse. If, however, you will make beef-tea according to the directions I now give you, it will be found to be a most serviceable article among the dietetics of the sick-room.

Take a pound of the very best beef that can be obtained in the market, — the butcher will tell you that any kind of a piece answers to make beef-tea of, but that is not true, — cut it into small pieces the size of the end of the thumb, place it in a pint basin, cover with cold water, and then place the dish upon the back part of the range or stove, where the water will gradually get warmer and warmer, but will not reach the boiling point. Let it stand and simmer in this manner two hours. Then bring it forward, and boil over a quick fire twenty minutes, and immediately after pour the fluid from the beef, at the same time allowing the little particles which become detached to flow off with it. Now, if there is any fat in the tea, it is well that it should be removed, for the reason that the bile and pancreatic secretion may be unable to emulcify it, and it may do more harm than good. If you wish to be very precise upon this point, the tea can be set aside, and when perfectly cold all the fat can be removed from the surface in a flake; or the fat may be taken up by dropping a piece of flannel upon it as it floats on the surface of the warm tea.

It is not a good plan to strain the liquor, because this process will remove more or less of the little particles of beef, which are very essential to the value of the tea. It may now be salted, and given hot or cold, as the patient may wish; and it may be given as soon as the pulse indicates any diminution in the force of the heart's action. What becomes of this article of diet when taken into the stomach? The advocates of the worthlessness and non-essential in beef-tea would answer that it makes but little difference. I believe, however, that it is mostly taken up by the gastric veins, and at all events that it is exceedingly palatable and nutritious, and does do something more than simply warm the stomach and make the patient happy for a short time.

where they have, we are told, adopted the orthodox English first-class carriages, and find them popular. One journalist praises the ease with which ingress and egress is obtained with carriages on this system compared with those of the American pattern, which have only one entrance and exit, as well as the superior handiness of the English carriages, especially for rapid local trains; but probably some part of the inducement to use them is the facility they give for the separation of wholesales and retail.

A MYSTERY SOLVED. — The nature of life has been a standing problem for philosophers, but the question is now happily settled. A Mr. H. A. Huntley, an English analytical chemist, has written a pamphlet, published by the Longmans in London, in which the following lucid explanation of the mystery is given: —

Thermo Dynamical Phenomena — or as some term it — “*Life*” from the lowest Organism a fungus, or a monad, up to man — is a simple, — and by gradual cosmic Evolution a most complicated kind of machinery — is matter — living matter (sensible or kinetic,) however by Cosmic Evolution to-day, either in the speck of *Bioplasm* in the cell of a fungus — a dog — or a man, — or in the numerous Bioplasts of their various textures respectively. But — nevertheless the remote RESULTS by Evolution (cosmic) of *Primeval*, *Potential* or Non-Living matter, effected by the *Primeval* vibration of Thermo Dynamical action upon our earth, — (in the recesses of her remote antiquity, and when, (as has been advanced) she maintained favorable conditions for the display of Thermo Dynamic action), with the production of low forms of Organisms upon her adaptable surface. — These low organisms being Matter, dependant upon *matter* palladium — in the form of solids and gases dissolved in water. More complex organisms, as the Flora and Fauna — being Matter pervaded by a current of the Energy Heat — dependant upon more complex palladium, as Vegetables, etc., — effected in both by the processes of *nutrition* and *accretion*.

ATOMS.

A LOCOMOTIVE steam-crane for doing the heavy lifting at railway stations, and capable of moving itself from place to place along the track, has been put in operation in England, and is said to work well. — A new route from England to the Continent has been opened from Sheerness to Flushing, where connection is made with the net-work of Dutch railways, and the vessels placed on the line are of large class and fitted up like ocean steamers. — In St. Mark's Library, at Venice, there is a MS. in the handwriting of John Locke, consisting of notes

POWDERED MEAT.—Powdered meat is prepared by Dannecy, *pharmacien en chef* of the hospitals of Bordeaux, by finely chopping the fresh meat, spreading it upon muslin, and drying it rapidly in a current of air. A friable mass is formed, which readily yields a brown, nearly odorless powder, possessing a feeble saline taste, and of which one part represents five parts of fresh meat. It is used and readily taken by patients by adding a teaspoonful to a cup of beef-tea or soup, or by spreading upon bread. For children it is mixed in certain proportions with the ingredients for biscuits.—*American Practitioner.*

monies was inaugurated, and its marked influence on the future of the University to which it is attached, and also on the progress of medical science in this country.

Various accounts of the architectural characteristics of the building have appeared from time to time in the daily papers, but there are some points of interest to medical men which may be mentioned.

The plan of the hospital includes a central building of administration, with a series of pavilions, six in number, and calculated to accommodate when completed at least seven hundred patients; of these the central building and one pavilion are completed, giving accommodations for one hundred and eighteen patients. The central building contains kitchen, apothecary-shop, steward's apartments and offices, and in addition, rooms for private patients, resident physicians, etc.

Two admirable lecture-rooms are contained in this part of the building: a smaller one on the first floor, which will accommodate two hundred students, and an amphitheatre, having its base in the second story, sixty feet in diameter, and forty-five feet high to the skylight in the centre of

It will seat over five hundred.

MEAT-TEA.—Bogoslowsky (*Arch. f. Anat. u. Physiol.*, 1872, 347, 428, and *Centralblatt*, 1873, p. 279) has re-examined the theories of Kemmerich in regard to the action of meat-tea, which was supposed by him to depend wholly on the potash salts contained therein. Bogoslowsky says that Kemmerich used too large doses, and that the fact that a rabbit can be killed not only by a large amount of beef-tea, but by the salts extracted from a similar amount, proves nothing except that both are (in enormous doses) poisonous.

With small doses the difference is a marked one. While, for example, a rabbit was killed by the injection of extract of 700 grammes (1 pound 10½ ounces) of meat reduced to 30 cubic centimetres (about 1 ounce), the ashes of the same quantity dissolved in 30 cubic centimetres of water produced in another rabbit only a transient acceleration of the pulse, and the animal completely recovered. Nine days after, it died in an hour and a half after the ingestion of the corresponding quantity of meat-tea.

It was shown that injections of warm water cause an increased rapidity of the pulse, but of meat-tea, a much greater and more lasting acceleration. The salts hardly differ from warm water, or, in larger doses, the acceleration may last somewhat longer.

The author was able to produce these phenomena to a slight degree in his own person, but in another individual did not succeed. After larger doses (10, 20, 30 grammes), in the latter case, the pulse fell, while the thermometer was unchanged. After 40 grammes gastric symptoms appeared, and the pulse rose. He concludes, as a practical result, that extract of meat is not so innocent a dietetic substance as is generally supposed, but always calls for care in its administration. (If Liebig's or any similar extract is here referred to, it would seem that the danger is not great unless the quantity used considerably exceeds that mentioned in the directions accompanying the packages.)

In endeavoring to determine to what ingredient meat-tea owed the excess of its action over that obtained from the salts, Bogoslowsky found that creatinin, which exists in extract of beef in considerable quantities, when injected either into the jugular vein, under the skin, or into the stomach, produced a slight acceleration of the heart's beat, but he could not get any fatal effect.

From all which it appears that the stimulant action of ordinary doses of beef-tea is due partly to the warm water, the salts, and the creatinin. It would seem, however, from the observations last quoted, that the presence of creatinin is not sufficient to account for the difference between the action in beef-tea and the salts obtained therefrom. It is only in exceedingly large doses that the salts alone are sufficient to account for a fatal effect by their depressing action upon the heart.

Leube (*Berliner Klin. Wochenschrift*, 1873, Nos. 17 and 19, and *Centralblatt*, 1873, p. 491) has made use of the following method of preparing a solution of meat, to replace the complicated and costly process of Meissner with natural pepsin, which is, besides, objectionable on account of the disagreeable taste and smell of the product. 1000 grammes of lean beef is placed in a porcelain pot, with 1000 cubic centimetres of water and 20 cubic centimetres of pure hydrochloric acid. The mixture is heated in a Papin's digester for ten or fifteen hours, and occasionally stirred. The mass is then rubbed down in a mortar to the consistence of an emulsion, and boiled fifteen or twenty hours more without the cover of the digester being lifted. It is then neutralized with carbonate of soda, evaporated to the

induce extensive coagulation in the sac, seems evident; and it is very desirable that any method which gives reasonable hopes of curing what has hitherto been a necessarily fatal disease should be thoroughly tried before being condemned.—*British Medical Journal*.

THE USE OF ERGOT.—Dr. T. K. Spendee writes (*British Medical Journal*) as follows: "I have given ergot in some cases of neuralgia, according to the advice of Dr. Woakes, of Luton; but, though I have had particularly good results, I have not been able to remove pain entirely by the use of ergot alone. I can endorse all the favorable views of ergot in the treatment of hæmoptysis, as related by Dr. Dobell and Dr. Anstie. I have used the medicine for this purpose during several years past, having been originally led to do so by a consideration of its therapeutic analogies. It does not yet seem to be clearly defined whether there is any stage of phthisis, even the most advanced, which is absolutely beyond the control of ergot, when spitting of blood occurs. Of the exceeding value of the medicine in these cases (though it now and then unaccountably fails), there can be no doubt whatever; and, as the facts are very little known, attention cannot be too often called to them. The action of ergot on the uterus is a proverb: why should it not affect in a similar way a neighboring organ,—the bladder? I have found that that quasi-paralytic condition of the bladder, which may come on in middle-aged persons from over-fatigue or from simple want of power in the coats of the organ, is greatly relieved by the continuous use of ergot, and may be altogether removed. The so-called hysterical paralysis of the bladder in young women is admirably treated with the same medicine (though I cannot deny the occasional necessity for the use of the catheter). Whether this want of power be simply motor weakness, or secondary to some variety of abdominal neuralgia, there is no more splendid combination of medicines than ergot and strychnia (half a drachm of the fluid extract of ergot and five or six minims of the *liquor strychniæ*, Ph. B., in chloroform-water, three times a day); and these doses should be continued perseveringly for several weeks, as a very rapid benefit cannot be expected.

TRAUMATIC DESTRUCTION OF ONE CEREBRAL HEMI-SPHERE WITHOUT FUNCTIONAL DISTURBANCE.—The eminent Italian surgeon Porta brought before the Institute of Lombardy, on the 19th of December, 1872, the case of a man who, in consequence of a severe injury, lost the whole of the right hemisphere of the brain. The unconsciousness lasted a few hours, but when the patient recovered his senses he recollected being picked up and taken upon a cart to the hospital. He stayed two months and a half in the institution, the skull exfoliated, and the wound became fungous, when he claimed his discharge, though affected with paralysis on the left side, which had occurred immediately after the infliction of the injury. He subsequently applied at the clinical wards of Pavia, where Dr. Porta had an opportunity of studying the case. Eighteen months had elapsed since the accident, and twelve months since the closure of the wound. The author minutely describes the integrity of the intellectual functions, the amount of paralysis in the upper and lower limbs, and concludes by dwelling on the three following points: 1. That the encephalon is a double organ, composed of two equal parts, and that, one being destroyed, the other survives without functional disturbance. 2. That in the different spheres of the cerebral, medullary, and nervous system, special and diverse functions are perfectly isolated and localized, the disturbance of the

Leube's

Solutio Carnis

consistence of a pap, divided into four portions, and dispensed in pots.

The muscular fibres are broken up to a fine detritus, and the greater part of the albuminoid constituents is dissolved. The preparation is well borne and willingly taken, but it is better to use some other easily digestible food therewith,—in order not to disgust by too constant use. The taste may be improved by the addition of Liebig's extract.

The solutio carnis has been used in acute gastric ulcer and in chronic dyspepsia. It is supposed to give rest to the stomach by sparing it the labor of digestion, the albuminoids being already converted into peptones.
—*Boston Medical and Surgical Journal.*

affections of the liver is well known, to which is perhaps due the relative frequency of hepatic disease in females. Senator has recently contributed an article in which he draws attention to the hitherto apparently unobserved coexistence of menstrual disturbances and jaundice. Four cases are recorded, in all of which, up to five repetitions, before or during the menstrual period, with slight or no loss of blood, jaundice appeared, continuing several days, and accompanied by corresponding constitutional disturbance and gastric derangement. With the appearance of a more copious flow the symptoms disappeared, leaving the patient well up to the next menstrual period. It was evident that the cause was biliary obstruction, from the simultaneous

PROTECTION FROM DISEASED MEAT.—There is an excellent regulation in the Havana slaughter-houses, which could be copied with advantage elsewhere. A law of the city requires the daily attendance of a veterinary surgeon at the slaughter house, to inspect every animal brought to be slaughtered, thus effectually preventing the sale of unsound meat.

Butchers are themselves
injured sometimes by handling
diseased animals' meat
Φ

ing as *William J. Byrnes vs. the Schuylkill Centre Coal Company*. An action on a promissory note. Verdict for plaintiff for \$704 42.

DISTRICT COURT—Judge Sharswood.

William McAleer vs. Andrew J. McMurray, and others.—An action brought to recover the value of certain oil stock, which plaintiff alleges he was induced to purchase through misrepresentations. The defence denied the misrepresentation. Verdict for plaintiff.

In the case of *Conklin vs. Adams*, the jury returned a verdict for plaintiff for \$30,920.

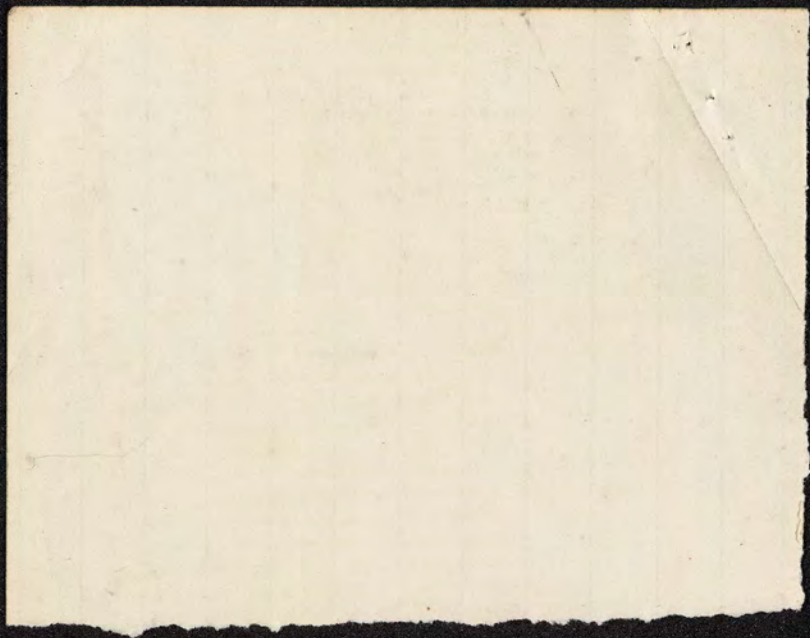
William J. Byrnes vs. the Schuylkill Centre Coal Company. An action on a promissory note. No defence. Verdict for plaintiff \$704 56.

"A MOST singular banquet has just taken place in Paris. M. Decroire invited several of his friends and a small company of scientific men to dine upon the flesh of horses which had died from the glanders; of cows the victims of the rinderpest; and of an ass just killed for hydrophobia. It was a 'test banquet,'—one that proved the devotion of each man there to science, in that he was willing to risk his life to demonstrate, in the most practical manner, that the flesh of animals is not affected as human food by even the worst diseases."

1872 or 3.

you must see that unless that waste be supplied by proper and fresh materials, the patient's strength must necessarily be very much reduced below its normal condition; and should any untoward event happen to her in these circumstances, the prognosis must essentially be infinitely more unfavorable than if her system had been duly sustained by generous diet. On these grounds I have always been in the custom of liberally administering to my puerperal patients the most nourishing food which their circumstances enable them to procure, such as soft-boiled eggs, beef-tea, soups, chops, steaks, tripe, etc., with a glass of wine daily in addition, or, if the patients prefer it, a glass of ale or porter; and this treatment, I humbly aver is based on sound

9 In 1870, an English periodical
states that in London about 2 tons
of diseased meat are ~~slipped~~ every
two ^{four} ~~four~~ a year.
In ~~1869~~ ¹⁸⁶⁹ more than 19000
head of game & poultry, & more than 7 million
of fish were condemned there for putridity.



Directly in conjunction with the subject of "adulteration" is that of the sale of *improper* food, and it is one demanding the attention of all, both rich and poor, for all are sufferers in its results. This evil is the cause of much sickness, and, therefore, is one of the many impositions which the public cannot, in safety to itself, suffer in silence. At this season of the year the greatest violation of the existing laws consists in the sale of "young veal." The technical term applied to this kind of meat by butchers is "bob calves," and it signifies anything in that line under a week old, and weighing less than 10 pounds. Few people probably are aware that no calf is fit to be eaten for four weeks after its birth—seldom even then. By a law of this State, no calf can be sold as meat unless it is four weeks old. Notwithstanding this statute, enormous quantities are disposed of in New-York, of which a considerable part is only four and five days old. An indulgence in this kind of food manifests itself in the shape of diarrhea and cholera morbus.

Most of the "bob veal," or "bob calf" makes its way into the city from the country places throughout the State. The farmers and dairymen who live near the line of railroads, wishing to get rid of their calves at as early an age as possible, that they may secure the milk of the cow, ship them to New-York when only four or five days old. Thus the most of them arrive here alive, and are first stabled at Bull's Head, at One-hundredth-st. They are then slaughtered, after which they are bought up by a set of men who are not legitimate butchers, but who give their attention exclusively to this kind of underhand business. These bogus butchers convey the veal secretly to different quarters of the city and then palm it off on people as good, wholesome meat. Another class of persons—who might be styled "calf-speculators"—go up into the country along the route of the Harlem, Erie, Central, and Hudson River Railroads, and buy "bob" calves directly from the dairymen, after which they bring them into New-York killed and partly dressed. Considerable traffic of this nature is done by way of the Hudson River, but as the boats will not carry live calves under a specified weight, they are first slaughtered and sent in baskets. Much of this meat is brought to the city in sloops and schooners. The region around Peekskill is obtaining an unenviable notoriety in this business.

This unwholesome, poisonous veal is sold in different parts of the city. At Washington Market, although a large quantity is disposed of, the dealers are very careful in exposing it for sale. At the slaughter-houses, corner of Forty-seventh-st. and First-ave., there is a good market for it, as also at many other places. The Board of Health has long been aware of these facts, and has done, and is doing, its best to put a stop to the business. The police are even on the alert, and many and frequent seizures have been made. According to the reports of the Board, during last week 33 "bob calves" and 5,298 pounds of the veal were seized; during the preceding week 28 "bob calves" and 4,746 pounds of veal; during the week ending March 15, 16 "bob calves" and 1,980 pounds of veal, and prior to that 9 "bob calves" and 1,997 pounds of veal. Twenty-five ~~of~~ ^{of} ~~the~~ ^{the} ~~last~~ ^{last} ~~year~~ ^{year} were lately seized in Astoria.

We are afraid the graceless and lazy reporters have saved themselves a little trouble by taking an old copy of his Speech to telegraph to the country, but still, that is of no consequence. It is all the same.

At last we have the promise that something can be done about our long-promised new Post-Office. In the selection of Mr. A. T. Stewart and Mr. William Orton for members of the Commission to determine the new site, the Secretary of the Treasury has shown a fitting appreciation of the business community of New-York, and has secured men whose conduct is sure to be above the suspicion of improper motives, and whose decision, whatever it may be, will command universal respect and acquiescence.

Congress will have made a mistake, if it shall prove to have raised the appropriation for collecting next year's Internal Revenue from \$6,000,000 to \$8,000,000. The latter figure sufficed when we had an excise on almost every product or bargain, and collected twice as much Internal Revenue as we now do. The number of employés now required must be far less than it was, and \$6,000,000 should pay the entire cost of the service. Refuse to appropriate more, and the service will be cut down—as it should be.

The Senate of the United States of Colombia has refused to approve the Treaty recently concluded between the United States and the Colombian Government for the opening of a Canal across the Isthmus. The arguments of the Committee which reported against the Treaty were very insignificant; the main argument being evidently that they desired a larger sum of money. The foreign residents in Panama have received the vote of the Senate with great dissatisfaction, and many claim for the State of Panama the right to take the matter into their own hands, and enter into direct negotiations on the subject.

Marshal Serrano, on Thursday, informed the Cortes that elections in Cuba would immediately be ordered,

7
London

... of meat and 75 head of
game and poultry as unfit for human food.
It consisted of 16 sheep, 10 pigs, 32 quar-
ters of beef, and about fifty joints of meat.
Three-fourths of it was diseased animals;
and I recommend that in five cases the
matter be submitted to the solicitor for fur-
ther investigation. The inspectors inform
me that much of the diseased meat of
Newgate-market finds its way to the
sausage-makers of Cow-cross. Last week
the inspectors seized the carcasses of a dis-
eased sheep and pig, which were being
carried to a sausage-maker in that locality.
The sheep had died from rot; and the pig
was covered with small abscesses, like boils,
many of which had burst through the skin
and the rest were still full of matter. Both
of these animals were in a shockingly dis-
eased state, and but for the interference of
the inspectors would have been converted
into sausages. I have also to state that
the slaughter-houses of Cow-cross, which
are just outside the city, are a source of
great anxiety to the inspectors, from the
circumstance that diseased animals are
frequently slaughtered there, and brought
into the city markets. Last week there
were two such instances. Two diseased
bullocks had been killed in the slaughter-
house of a Mr. Crosse, and then carried to
Newgate-market, where they were seized
by the inspectors. In like manner, at
Whitechapel it is a common practice with
some of the butchers, who are outside the
city boundaries, to traffic in diseased meat;
and the city butchers and salesmen com-
plain that they have not the same chance
for the disposal of inferior meat which their
neighbors have, and that the rigorous super-
vision of the city is unjust to them. Only
last week the carcasses of several bullocks,
about a dozen or so, that had died on ship
board, were sold in Whitechapel. Meat of
this description is disposed of to the poor
at night, when it passes for wholesome
meat, and it realizes from a penny to five
farthings a pound." Now it must not, we
think, be supposed because similar returns
do not appear from other cities, that this
infamous traffic does not exist there, but

Extraordinary Abstinence from Food.—

On the 10th of April, a young woman, aged twenty-seven, named Martha Batten, was committed to Reading gaol, from Newbury, Berks, on a charge of vagrancy. She refused all food for eighteen days, when, on preparations being made by the physician of the gaol, Dr. Woodhouse, and the surgeon, Mr. F. A. Bulley, for forcing some gruel down her throat, she reluctantly consented to take a little. She appeared to suffer little inconvenience from the long fast. Two years since she was imprisoned in the same gaol, and passed seventeen days without food.—*Lancet*, May 9, 1863.

Effects of Syrups on Linen.—Dr. DORE sent in a paper to the French Academy of Science on the effects of syrup dropped on linen. All syrups, and those of sugar especially, when dropped upon cotton or linen stuffs, and exposed to a moderate temperature, deprive these stuffs of their flexibility and tenacity, and the threads break very easily under their influence. At first sight, the rent has the appearance of having been produced by some corrosive substance, weak sulphuric acid, for instance. A similar effect is produced when wet linen is exposed to a certain degree of cold; the linen becomes brittle. Dr. Dore observes that it is highly important to notice such facts, because they might sometimes, in ignorant minds, generate suspicions injurious to the reputation of a chemist, or of a physician, or else furnish ill-disposed persons with a weapon against those who attend the sick.—*Dublin Med. Press*, March 4, 1863.

Sale of Diseased Meat as Human Food.

—Notwithstanding all that has been written, said, and enacted to prevent the baneful and disgusting practice of vending for human food meat in a horribly diseased state, there is only too much reason to know that it is carried on to an excessive and dangerous extent, even in the city of London, where the inspection is in this respect, we believe, more vigilant and complete than in any other city of the kingdom. We invite par-

THE POISONOUS PRINCIPLE OF SPOILED CORN.—Prof. C. Lombroso (*Centralbl. f. Med.*, 1876, p. 228) describes two poisonous principles derived from spoiled maize: an oil, soluble in alcohol, and an alkaloid. From these may be derived a body closely resembling strychnia, possessing all the chemical and most of the physiological reactions of the latter alkaloid. In frogs, not only tetanic symptoms, but also those of paresis and narcosis, were induced by administration of the oil. In chickens, after prolonged administration of the oil, only paresis and convulsive movements of the head, with inclination to retrograde movements, were induced. The administration to chickens of the alkaloid, on the other hand, induces death in a few minutes, with previous paralysis of the limbs and chronic convulsions. Administered to locusts, fish, mice, etc., the alkaloid gives rise

to symptoms like those of strychnia poisoning.

was found to be thick, cloudy, yellowish-green in color, strongly alkaline, with a specific gravity of 1020. It had a perceptibly feculent odor. The next day the patient passed small lumps of fæces, and suffered greatly from pain in the urethra. Injections of warm water were employed, and tannin, together with opium, was administered internally. Experiments, by injecting coloring-matter, etc., into the rectum, showed communication between the large intestine and the bladder. The passage of fæces into the bladder ceased shortly after, but the patient died suddenly while at stool. No post-mortem examination could be obtained. X.

NEURALGIA OF THE LESSER INTERNAL CUTANEOUS NERVE OF THE ARM (NERVE OF WRISBERG).—A. Seeligmüller (*Centralbl. f. Chir.*, 1876, No. 17; from *Arch. f. Psych. u. Nervenkr.*) gives the case of a woman, 43 years of age, who had suffered

BLOOD-DRINKERS. — Upon inquiry at slaughter-houses, it is found that there are nearly two hundred persons in the city of New York who are in the habit of drinking blood flowing warmly from oxen, for strengthening purposes and for the cure of certain diseases. A lady is reported to have spoken to an inquirer as follows: "Professor Velpeau, of Paris, prescribed blood for me. I was consumptive and hastening to the grave. It has prolonged my life fifteen years. I had the utmost repugnance for it at first, but now a half-pint of hot blood from a well-conditioned ox is the greatest luxury of my life. My sister's baby so far has been preserved and nourished with little else but blood. I know twenty persons who drink it in my own neighborhood to whom I have recommended it. It has extraordinary effects on some people, especially women, but should not be resorted to unless there is absolute weakness of the system." On a visit of the inquirer to a slaughter-house in Tenth Avenue, near Forty-second Street, he found a delicate-looking woman with a sickly boy holding a glass to the blood which ran from an ox with his throat cut. Both drank two or three glasses in turn, and departed with an appearance of added vigor. One of the butchers was asked whether he ever drank blood, and is stated to have replied to the following effect: "Sure an' I do, now; why not, now? Faith,

pressure during a protracted labor produced its death. There were two placentas; three of the children were attached to one, while the dead one was attached alone to the other. No physician was present during her labor, an old negress being the only attendant, and her description of the accouchement was highly interesting and graphic in the extreme.

Respectfully,

JOHN W. PITTS.

BERLIN, MD., September 22, 1874.

At a special meeting of the Medical Board of Charity Hospital, held September 22, 1874, the following resolutions were adopted:

"Whereas, It has pleased the All-wise Providence to remove from our midst our friend and colleague Dr. Washington Atlee Hoffman, be it therefore

"Resolved, That the Medical Board of Charity Hospital express their heart-felt sorrow at his death.

"Resolved, That we hereby tender to the family our sympathy in their bereavement.

"Resolved, That a copy of these resolutions be presented to the medical journals for publication; and that the Medical Staff of the hospital attend the funeral in a body.

"H. LEAMAN,

"Secretary."

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS
OF THE MEDICAL DEPARTMENT U.S. ARMY, FROM
SEPTEMBER 22 TO SEPTEMBER 28, 1874, INCLUSIVE.

SMITH, JOS. R., SURGEON.—When relieved by Assistant-Surgeon Koerper, to proceed to Fort Monroe, Virginia. S. O. 190, Military Division of the Atlantic, September 24, 1874.

KOERPER, E. A., ASSISTANT-SURGEON.—In addition to his duties at Detroit, Michigan, to relieve Surgeon Smith of his duties at Fort Wayne, Michigan. S. O. 190, c. s., Military Division of the Atlantic.

an' ye couldn't tell the difference between it an' milk. It's just as swate, shure, and in the winter it's warm and foine. Bedad but it's stringthenin', sure. Hould on, an' I'll get ye a drap. It's best warrum—runnin' right from the baste." The proprietor said, "All last winter we had men, women, and children every morning to drink blood. They always imbibe beast's blood; never the blood of sheep. Some of them wince a bit at first, but, when you close your eyes, blood warm from the beast's neck has just the same taste as warm milk from the cow. We don't charge for the blood, excepting when we sell it to sugar-refiners." The blood of beeves is asserted to be more efficacious for weak lungs than cod-liver oil.—*The Laboratory.* 1874.

THE INSTINCT OF BIRDS.—The foresight of birds of a coming epidemic of cholera has been occupying the attention of the *Jardin Zoologique*. That journal states that, a few days previous to the terrible ravages of cholera in Gallicia in 1872, all the sparrows suddenly quitted the town of Przemysl, and not a single bird returned until the end of November, when the disease had entirely disappeared. The same circumstance was remarked in Munich and in Nuremberg. During the attacks of cholera at St. Petersburg and Riga in 1848, in Western Prussia in 1849, and in Hanover in 1850, every swallow and sparrow forsook the town, and remained absent until the eradication of the scourge.—

British Medical Journal